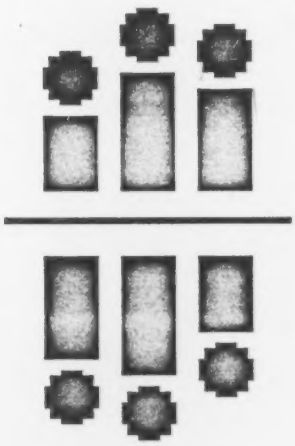
Policy Study Series

Center for Information Technology and Society

EDUCATIONAL TECHNOLOGY: INFORMATION NETWORKS, MARKETS AND INNOVATION

PART II

INFORMATION NETWORKS: The Diffusion of Innovation and Highlights of Discussions with Eighteen Networks of Teachers, Administrators, State Coordinators and Other Information Providers



September, 1987

W. Curtiss Priest, Director
18 Whipple Rd.
Lexington, MA 02173
617-862-7763

Part I — *General Framework on Markets, Nonprofits, Patrons, and Policy*

Part II — *Information Networks: The Diffusion of Innovation and Highlights of Discussions with Eighteen Networks of Teachers, Administrators, State Coordinators and Other Information Providers*

Part III — *Survey of Ten Educational Software Firms: A Study of the Economics of the Market and the Process of Technological Innovation*

Part IV — *A Survey of Four Firms Involved in Both Educational Software and Business Products*

Part V — *Reference Materials: A Comprehensive Bibliography on Educational Technology, Innovation, Adoption, and Policy* and Appendices

A Center for encouraging the growth and development of information technology for social needs including improved systems for learning, health, and governance.

J952-29

HIGHLIGHTS OF DISCUSSIONS WITH EIGHTEEN NETWORKS OF TEACHERS, ADMINISTRATORS, STATE COORDINATORS, AND OTHER INFORMATION PROVIDERS

UNDERSTANDING HOW SCHOOLS LEARN ABOUT EDUCATIONAL SOFTWARE

BACKGROUND

A Diffusion of Innovation Perspective on Information

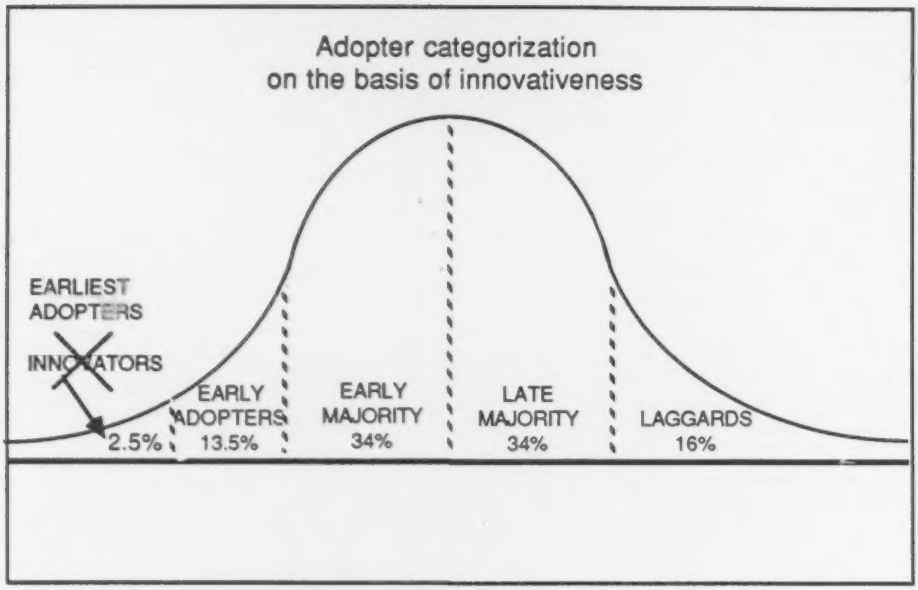
Review of Basic Research

Rogers [1971], Allen [1977], and others have noted the importance of information networks for the adoption of innovations. Tom Allen found in his research on the subject, the role of a gate-keeper — a person who others turn to to find out about a new subject or technology. In the educational area the term **lead teacher** is often used to describe a teacher who leads others by being first in an new area.

Everett Rogers has fathered the field on the communication of innovations and most recently studied the adoption of computers in K-12 schools – *Microcomputers in the Schools: A Case of Decentralized Diffusion* [1985]. In Roger's conception of diffusion and adoption, the adopter can be categorized into five types as shown on the next page.

The figure has been slightly modified from the original by the substitution of **early adopters** for **innovators**. This reflects a difference between two areas of study that have both used the word innovator to mean two different things. In the literature on innovation and invention, from the fathers of the study of technological invention, Schmookler and Schumpeter, on up through Abernathy & Utterback [1976], Priest & Hill [1980], and Kamien & Schwartz [1982], the term innovation is used for *the first commericalized product or service embodying some new technology or technique*. Thus, the **innovator** is *a person or firm that introduces such a product to the marketplace*.

In contrast, in the literature on communication and diffusion of innovations including Rogers and almost all of the educational literature on new technology, the word **innovator** is commonly used to mean *a person who first introduces a product or service embodying some new technology or technique into their organization or firm.*. This report, fortunately or unfortunately, spans both literatures and must reconcile the difference. We can try to appeal to the basic processes going on



Source: Rogers and Shoemaker, 1971
Center for Information Technology and Society, 1987

to distinguish the two uses but in both cases a degree of pioneering and risk taking is going on: in the case of the first, the person or firm is clearly taking brave steps to first invent and then introduce the product to the environment. In the second case, while the person is not inventing the product, he or she is pioneering its use within the organization as well as introducing the product to the organization's environment. What is lacking in the second case is **invention** and what is lacking in the first case is **adoption**. Since invention is semantically closer to innovation, it is suggested that the second use is less preferred than the term **earliest adopter**.

The character of each of the five types is commonly described as:

Earliest Adopters: Venturesome

> These people are eager to try new ideas. This interest leads them out of local peer groups into a network of relationships that bring them closer to fellow earliest adopters. The earliest adopter can cope with the hazards and risks of the innovation and is willing to accept an occasional setback when one of them proves unsuccessful.

Early Adopters: Respectable

> Early adopters are more integrated into the local school system than the earliest adopters. These people provide a greater amount of opinion leadership because they have greater respectability than the earliest adopters. The category of early adopter corresponds closest with Allen's concept of gate-keeper – these are the people that others readily turn to for advice and assurance.

Early Majority: Deliberate

> These teachers and administrators adopt innovations before the average member of schools. They interact among themselves but rarely display leadership to others. Nonetheless, they represent an important link in the diffusion process.

Late Majority: Skeptical

> The late majority adopt innovations after the average member of the school system. They often adopt out of increasing social pressure and approach the innovation skeptically and cautiously. They tend to wait until they sense that most school systems have adopted the innovation.

Laggards: Traditional

> The laggards are the last to adopt the innovation and possess almost no opinion leadership. They often are isolated from mainstream thought and tend to base their actions on what previous generations have done rather than on what people around them are doing.

Research opinion differs about "resistance" to innovations based on "fears" and "threat to job security." In traditional industries such as automobiles and insurance, where job loss does occur regularly due to automation, there clearly is a basis for these concerns. In professional occupations the story is complicated by an interaction between the occupation and production – e.g. in office application of word-processing, studies have shown an increase in the quality and amount of materials generated rather than a reduction in the workforce. Tora Bikson of the Rand Corporation found in her studies of office automation [Bikson, 1987] that there was little fear of technology – rather when it was evident to the worker that the computer was a distinct aid to accomplishing a task, it was often difficult to keep people away from scarce terminals and equipment.

Review of Research on Adoption of Innovations in Education

Much has been written about the adoption process of teachers and administrators. Eighty citations were readily identified on the subject and appear at the end of this chapter. In general they mirror the process described in the basic research. Throughout these pieces is a strong message of the need to facilitate the diffiusion process through training of teachers and administrators.

One aspect of the process complicates matters. The adoption of computers in education is commonly viewed as if it were the adoption of a single new technology. This, of course, is incorrect — almost year by year what is currently the innovation is quite different than a few years before. In the 1970's, the earliest and early adopters were focussed on micro-computers. Due to their cost, few schools could afford them and little software was generated accordingly. In the late 1970's and early 1980's, the microcomputer made computers in the schools much more practical. However, these machines differed distinctly in performance from microcomputers today (with almost unlimited memory and high-resolution graphics) and within that generation of machines there were those that persisted (mainly the Apple II) and those that did not (TI 99/4, Pet Commodore, Atari, and Radio Shack's earlier models).

For each of these differences in technology (and attendant software) the adoption process is restarted. There are new earliest/early adopters in addition to those who have made the transition and the diffusion process runs a distinctly new course. And, of course, there is an interaction between each cycle. For example, poor experiences in earlier cycles exerts a negative attitude on later cycles. Curiously, over 95% of the experience of schools with computers recorded in the survey conducted for this study as well as the experiences recorded in the literature are with machines that have 48K or 64K limits on memory — almost toys in today's standards. The Rogers study [1985] was more a study of experiences with mini-computers and very early microcomputers than of the predominant types of the early to mid 1980's.

An Economics-of-Information Perspective

As further discussed in the Chapter on *A Framework for Viewing the Roles of Nonprofit Institutions, Software Publishers, and Patrons*, information is a key term in two major senses. First, software and computers, as information systems, are information commodities. These commodities have distinctly different economic and social characteristics than commodities like soap and light bulbs. One commonly recognized difference is the ease of pirating software

compared to stealing light bulbs.

The second use of the word information is in reference to knowledge **about** software and computers. In the market process this information is the gist of catalogues and advertisements. It has also become an activity of institutions such as EPIE (see, for example, EPIE [1984]), state consortiums, and professional associations such as The National School Boards Assocation's Institute for the Transfer of Technology to Education (see, for example, Mecklenburger [1987].

With regard to the second use, there are five economic concepts of relevance:

Search

Search refers to the costs of searching for information about a product or service. The state of perfect competition occurs where full and costless information is available on the quality, characteristics, and prices of all substitutable products. Areas that have "problems of search" can result in imperfect competition and, in some cases, market-failure.

Information on Utility Functions:

A parallel problem to the buyer's problem of search is the producer's problem of identifying consumer preferences (utility functions) so to know what invention to transform into a (hopefully) successful innovation. This information is not limited to just the consumer's values but also all attendant information about the capacity of the potential innovation in meeting those values. Thus, if the technology is awkward or ergonomically unsound, the disvalue of these effects must also be known.

There are three basic ways that firms successfully innovate taking into account the need for information on utility functions. The first is a "natural solution" — the consumer (qua user) is the inventor and innovator. In the literature on innovation, this is referred to as the **user-innovator** and scholars such as Eric Von Hipple at the Sloan School of Managment have studied the role of the user-innovator in many industries. In a recent study of the development of computer software for health and medicine, Priest [1986, pp. 49-71] found the importance of the physician-innovator in creating useful software. In education there are both the many software entrepreneurs who were former teachers and also the role of educators internal to the successful software firms.

The second approach is for a firm to be propelled by the information gathered by the marketing and sales divisions. In these firms the sales representative is not only conveying information to the buyer to reduce "search" but is also listening to the buyer for what is really

needed and can be afforded.

The third approach is for a firm to grow by acquisition of innovative firms. The innovative firm may be successful either by being a user-innovator or by using successful market feedback.

There is one further way some firms have succeeded in spite of the need for utility information. The above approaches are predominately of a **market-pull** orientation — the presence of a need simultanteously with the availability of the technological capability produces an innovation. In contrast, some firms have operated in a **technology-push** orientation. These often involve inventors who are mainly enamoured by new technology, produce new innovations, and leave it to someone else to figure out a use for it. Of course, no firm is entirely oriented one way or the other but will be some hybrid of the two approaches.

Information Asymmetries: Anytime private information about a product or service exceeds public information there is said to be information asymmetries. While the term is closely related to the problem of search it is often used for situations where it is in a firm's interest to **limit** the availability of information. Firms may wish to limit information when the quality of their products is inferior to others on the market and, in the special case of information commodities, when releasing information about the product simultaneously transfers to the good to the would-be buyer (further discussed under the fifth concept below).

Consumer Information: In response to problems of search and information asymetries, some other institution — often the government, a nonprofit organization, or an independent publisher — will provide information about products and services in the marketplace.

Information Transfers Good: Arrow [1971] was one of the first to fully recognize the problem mentioned above – that releasing information about information could lead to appropriability problems, i.e., some buyers would obtain the good without payment since the seller has in this case no way to fully inform the buyer about the product without providing it. Educational software is clearly such a case and the current trend toward providing preview copies directly to schools, while reducing problems of search, compounds problems of appropriability.

Thus, this is an unusual situation (both economically and socially) where attempts to remedy one problem (search) compounds another problem (appropriability).

Purpose of Information Network Discussions with Teachers, Administrators, and Others

There were two purposes of these discussions that follow from the above discussion. First, from the perspective of the diffusion of innovations, there was the question how advanced was the diffusion process? Second, from an economics of the market perspective, there was the question about how informed were schools about products and what problems of search existed?

Further, it was known that the flow of information from the publishing firm to the schools were using channels that differed distinctly from those of other commodities. To study problems of search and markets in the case of soap one would look at the market channels involving wholesalers, distributers, and retailers. The consumer would be exposed to advertisements and would try various soaps until satisfied. In contrast, the problems of identifying and assessing software are much greater. One solution to this complexity is to rely on a network of information about the innovation.

Elihu Katz [1955] investigated the role that people play in networks to influence others in decision-making. Using his approach, "sociograms" can be drawn that show who listens to whom in forming opinions and changing attitudes. (It was further development of this concept that showed the key roles that certain people had which led Allen [1977] to the role of gatekeepers.) Based on this view of information channels and networks, the intent of the discussions was to provide a first cut at who listened to whom in making decisions about educational software.

Survey Approach

To identify how much networks were providing information for educational software, eighteen initial contact points were identified at random across the country. These were identified by accessing the Market Data Retrieval (MDR) database on school personnel and printing out a random sample from this database. The records provided background about computer usage in the school or district as well as the names of key personnel in the school system. MDR often designates an individual as the computer-assisted instruction supervisor (CAI supervisor). This is MDR's designation for the individual. In many cases a principal or superintendent is the CAI supervisor, in other situations the person also handles school purchasing, while in a few cases the person is full-time in just that occupation.

Discussions were left open-ended so that the respondent could give weight to information sources that really mattered to him or her. In some cases it was useful to eventually prompt the

respondent about possible information sources and the following list was employed:

Information from:

- o Teachers
- o Supervisors
- o Administrators
- o Consultants
- o Associations
- o Sales Representatives
  - -Direct Sales
  - -Upon Request
- o Conferences
- o Informal Ties
- o College Ties
- o State Efforts
- o Consortium Efforts
- o Administrative Leaders
- o Idea Leaders
- o Own sense of American Education

The discussions are provided below numbered 1-18. The background information from the MDR database is first provided and gives a sense of budgets/student, the types and numbers of microcomputers, and the key personnel. Note: the record describes only the resources of the first point of contact. For example, if the contact point is an elementary school, the resources of the high school or the entire district do not appear.

Following the MDR record is a review of each discussion that was conducted.

SUMMARY

While almost all respondents were at least fairly knowledgeable about computers and computer software, the general impression from the interviews was how much schools are **just dabbling at computers**. The inavailability of hardware made the availability of software issue pale in comparison.

In terms of networks, there appear to be two parallel and equally important networks. One is a person-to-person network such as suggested by Katz in the above discussion. This network appears more important to principals and superintendents than it is to teachers. While teachers have a few people they "turn to" in the school system to ask about software, the administrators are more

in tune with consortium activities, conferences, and state activities. Teachers are seen more as in need of training by this network, not as people to really add to their network.

The other network is through the 60 or so computer magazines that lead teachers sees two or three of. Even software catalogues from vendors are held mainly by administrators or coordinators and only get into a teacher's hands when a publisher affords to mail their catalogue directly to teachers. Catalogues were seldom cited by teachers and often cited by administrators as sources of information.

In terms of the innovation adoption model of Rogers', all of the respondents were earliest, earlier, and early adopters. This should be qualified by the fact that the adopted innovations are mainly small 64K machines (mainly Radio Shacks, Commodores or Apple) and a curious and limited mixture of instructional software and also wordprocessing, or for business education — the larger memory IBM machines. Most of the respondents that fell into the early adopter category were mainly superintendents and principals. In fact, every superintendent and principal contacted was at least in the early adopter stage by now. The spreading use of computers for administrative purposes has clearly helped expand acceptance among this group. Earlier and earliest adopters tended to be either 1) directors of consortia, 2) a motivated media or libary person, or 3) a lead teacher. A limitation of the study was its focus on strong networks and therefore the perspective does not include information about teachers who are not considered key or lead.

A predominant reponse in the survey was how limiting budgets were. Most teachers could at best get two or three packages a year and unless they violate copyright, could then only use these packages on a very limited basis. School systems that had gone to local area networks (LAN's) and had software that was network compatible had an easier time getting more students to be able to access it.

MECC software was a clear winner in availability and cost. Only some people disparaged the quality and the arrangements MECC has made with state and regional levels has made the per student cost of software almost negligible in many cases.

Teaching training sessions are almost always cited as the most useful current activity. Computer literacy is seldom talked about any more; the main topic is getting either tool software or useful instructional packages.

At least a dozen or so states are preoccupied by business-vocational use of the computer. The impetus is to at least provide students with a job skill and it is in these situations that business is willing to work with the schools and pay for machines and software. In these states, other instructional software uses are quite ignored and computer acquisition is focussing on the IBM PC.

Perhaps the most important components of the person-to-person network are the nonprofit assocations and computer consortia. In the first case, many of the national associations have taken on computer education as a major part of professionalism in their society. In the second case, the need for 1) being able to preview software, 2) have good advice, and 3) the availability of workshops and teacher training, have provided the impetus for the formation of computer consortia nonprofits. Also important were the regional offices of state education offices in those states that have set these up as outreach in general. Very seldom has contact with the state's department of education been cited as useful except for procuring state funds.

In the chain of the person-to-person network, idea leaders in education and computers such as Papert or Moresund are seldom cited at the local level. However, they are immensely appreciated and understood especially by directors of the nonprofit educational consortia. These consortia appear to be an important bridge in turning **idea leadership** into **practicing leadership**.

It is clear that the trend in evaluating software is to obtain a preview copy that in most cases goes directly to the teacher for review. While many of the resource centers at the regional and state level have preview centers, in states where geographic distances are great, few people find time to make the trip to the center to preview software. Basically it makes better economic sense to ship software by mail than move teachers by car or plane. The costs of search are being transferred to the publishers which increases their operating and marketing expenses and also places their product at greater risk of being pirated. [Tom Synder at a recent OTA workshop lamented the problems of materials that are returned minus something or other that was part of the package.] Only if the practice increases sales volume to the point that it covers these additional costs will the publishers be ahead.

The most recurring theme throughout all the discussions was the lack of school budgets to do much more than dabble. When federal or state funds have been provided to help remedial learning and a school system has put those funds into a central minicomputer system such as by Computer Curriculum Corporation (CCC), this has been an exceptional activity and not the norm.

Many administrators emphasized how they leave the final decision on software acquisition up to the teacher. In none of the discussions was software acquired in a top-down fashion. Computers have been a different matter, however, where teachers have been stuck with a particular brand because "the administrator received a good deal" or it was what the PTA donated.

Almost nothing was said of the role of students or parents in the process. Magazine reviews were considered by some as very useful and by others as being too dependent on the proclivity of

the particular reviewer. Quality was seen as a very relative item and depended highly on what the particular teacher needed and wanted in his or her own syllabus. There were a number of instances where the spouse of the coordinator or administrator was involved in computers, say at a university, and provided a channel of information. Also, professors of teaching colleges for inservice training were very influential in exposing teachers to particular packages they they turn around and purchase.

In no case was there a reluctance to see the computer as at least useful in some areas and many expressed that acceptance and interest were increasingly rapidly. Only in a few isolated cases were teachers or schools creating their own software to meet their needs.

State influence was greatest when 1) They targeted funding or providing computers such as the allotment per student in New York State and the allotment of Apple computers in every school in Tennessee, and 2) When specific computer learning objectives were established such as the computer literacy requirements for grades 7 and 8 in Texas. These objectives generated a great amount of attention to educational computing.

Information Network #1

LUCK SCHOOL DISTRICT
710 BUTTERNUT AVENUE
LUCK, WI 54853

County: POLK
Telephone: 715-472-2151

This is a: DISTRICT
Type: Regular District

Services:
16MMFILM

Enrollment: 584
Grade Range: K - 12

Metropolitan Status: Rural
District: LUCK SCHOOL DISTRICT

Percentage of Children Below the Poverty Line: 10.8%
Total Expenditures for Instructional Materials: $34,300
Per Student Expenditures
(District-Wide)

Textbooks:	$ 12.00 - 13.99 (H)
Library Materials:	$ 5.00 - 5.99 (G)
Audiovisual Materials:	$ 4.00 - 4.99 (F)
Teaching Supplies:	$ 30.00 OR MORE (L)
Total Materials ----	NA

Microcomputer(s):
Apple: 1 - 9

Personnel:
ANDERSON, GWYNN
K-12 SPECIAL ED SUPERVISOR

LINDBERG, ROY
CAI SUPERVISOR

MEMMER, FRED
SCHOOL BOARD PRESIDENT

NYGREN, JOHN
MEDIA SVCS/AV/LIBRARY SUPV

ORMFON, ALLAN
SUPERINTENDENT
FEDERAL PROGRAM ADMINISTRATOR

The contact point was Roy Lindberg, the Computer-Assisted Instruction (CAI) supervisor. Mr. Lindberg was generally responsible for keeping the computer equipment and audio-visual equipment operational. He also teaches courses on introduction to history, programming, and advanced programming.

He learns about software and computers by reading books and articles in magazines such as *Creative Computing* and *Personal Computing*. He was mainly familiar with Bank Street Writer and programming software. He helps one of the teachers in elementary education, Ms. Sue Gregorish (see below).

For other information they turn to the educational consortium run by the state. Their regional office of this, CESA #10, is in Cumberland and Mr. Rollie Hicks (see below) provides assistance. In general CESA provides guidelines to the teachers that they may accept or not.

For software they are a member of MECC (the software publisher started as a state consortium in Minnesota.) They find belonging to MECC to be a low cost way of obtaining educational software compared to others. They can order software under preview and return it if unsatisfactory.

Mr. Lindberg has seen little software he really likes — too much drill and practice. He might write his own program to make a specific point. In advanced classes they teach AppleWorks.

Ms. Gregorish is an elementary level teacher. She is interested in teaching skills and relies on catalogues primarily to find software. She uses the program Storywords a lot. She also learns about software through talking with a teacher at River Falls and also from the reading specialist. She will order software, preview and return if unsatisfied. She is mostly pleased with the software and has only returned a couple out of fifteen.

She informs other teachers by copying reviews from one of the preview books and copies of ads, and routing these to others. The school principal passes along things he thinks would interest her and Roy Lindberg (above) sends things along to her.

She has one Apple IIe in her class and primarily uses Mindscape software (had received the catalogue from the principal). She has attended a couple of workshops conducted by CESA (see below) but found the driving distance difficult.

Mr. Rollie Hicks (CESA) aids school districts with previewing software, workshops, and telephone assistance. He concentrates heavily in software for business education. They are now in their fifth year in supporting business education and have switched over from Apple computers to

IBMs. Funding is through state "levy monies." They have had two phases of computer development and are now in phase 2.

They first concentrated on wordprocessing on Apples. He learned about this from classes and conferences at Oregon State and Portland State. Future Business Leaders of America hold national conferences and are significant at the state and local levels. Affiliation with this group helps in fulfilling a state "leadership development" component of state mandated curriculum.

In terms of contacts with other states, he sees both the State of Oregon and the State of Washington as more progressive than Wisconsin, and had visited with a Colorado group.

They have progressed from some TRS -80's, to Apple II's, to IBM PC/2 and Macintosh Plus's. The latter has been important for publication and graphics experience for vocational training and jobs. They use the Applewriter for WP on the Apples as well as Appleworks.

Publishers of interest included Southwestern Publishing and he appreciated their 30 day trial evaluation and free examination of documentation. He was less interested in McGraw-Hill's requirement of a site license and saw that as a hindrance. Software of interest to business education included automated accounting, keyboarding skills, Bank Street Writer, the Printshop, and Mastertype. He used First Choice to introduce spreadsheet and WP skills and had found that at a favorite computer store – Sears. A student had recommended it. Computerland also had an educational consultant [Note: the reliance on retail outlets in these inteviews was only found for business software — for which there was a broader market to support the retail overhead.] Other software of interest included Microsoft's Paintbrush for the IBM PC and Ready-Set-Go (preferred to PageMaker as "more complete to do layout").

Further coordination of business education came from an advisory committee of local people and a state level advisory committee. Their largest employer is United Telephone using IBM PC's with Word Perfect so training is highly oriented to that market to help students get jobs there.

In non-business areas they concentrate on software in math, keyboarding skills, and some problem solving. Particularly in problem solving people turn to Gerry Bradley, a math teacher.

In terms of the U.S. Congress, he wanted more funding of poorer schools that didn't have anything to offer in these areas (equity concern). Right now local taxpayers are picking up the costs. They have some start-up funds from the state matched at the district level.

The state is "pro-vocational." They compare their orientation with Nebraska, Arkansas, Utah, Florida, and Texas. There was strong concern when Pres. Reagan proposed cutting vocational and special education funding.

In general he "feels sorry for math and science areas" as the vocational area gets all the

funding. He emphasized that the area was rural and primarily a lumbering community.

Information Network #2

SUMMERS CO SCHOOL DISTRICT
PO BOX 430
HINTON, WV 25951

Actual Location: CROSS AND MAIN STREET, HINTON, WV

County: SUMMERS
Telephone: 304-466-2580

This is a: DISTRICT
Type: Regular District

Services:
16MMFILM

Enrollment: 2,542
Grade Range: K - 12

Metropolitan Status: Rural
District: SUMMERS CO SCHOOL DISTRICT
Percentage of Children Below the Poverty Line: 28.6%
Total Expenditures for Instructional Materials: $201,700

Per Student Expenditures
(District-Wide)

Textbooks:	$ 20.00 OR MORE (L)
Library Materials:	$ 6.00 - 6.99 (H)
Audiovisual Materials:	$ 5.00 - 5.99 (G)
Teaching Supplies:	$ 30.00 OR MORE (L)
Total Materials —	$ 75.00 OR MORE (L)

Microcomputer(s):

Apple:	25 - 49
IBM:	25 - 49
Commodore:	1 - 9
Radio Shack:	1 - 9
Other:	1 - 9

Personnel:
DEEDS, LARRY
ELEM CURRIC/INSTRUCT SUPV
ACADEMIC TESTING SUPV
PSYCHOLOGICAL TESTING SUPV

FOX, WILLIAM
MEDIA SVCS/AV/LIBRARY SUPV

GRIMMETT, CLYDE
SCHOOL BOARD PRESIDENT

LAWRENCE, RICHARD
BUS/FINANCE/PURCHASING SUPV
FEDERAL PROGRAM ADMINISTRATOR
SUMMER SCHOOL SUPERVISOR
CAI SUPERVISOR

RODES, CHARLES R.
SEC CURRIC/INSTRUCT SUPV
ASSISTANT SUPERINTENDENT
ACADEMIC TESTING SUPV

TASSOS, DEMETRIUS E.
SUPERINTENDENT

The contact point was Richard Lawrence, CAI supervisor, purchasing supervisor, and federal program administrator. He first spoke about business education uses. They were moving from Apple computers to Zenith IBM compatibles. They identify software through conferences and by what the state recommends (Vocational Division of the Department of Education). They have made several purchases with state wide site licenses including T-Maker, DBase III, Wordstar, SuperCalc, and a Corvus network system (statewide among vocational programs).

Non-business software was oriented to the Apple. They would often choose from demonstrations either by someone coming by to show and train them or through conferences. One important source was the Center for Creative Leadership, a software company started by 2 teachers who put out their own catalogue (out of Charleston, WV). They use MECC software through a club membership through a Regional Educational Service Agency (RESA) which has arranged a MECC site license agreement. They consider MECC software "sometimes narrow in scope."

Teacher training is obtained through the West Virginia College of Graduate Studies. They have courses on how to evaluate software and the professors make recommendations on software choices. State level conferences are held by the West Virginia Leaders of Learning and the West Virginia Chapter of the American Society of Business Officials (ASBO). Vendors will display software at these events. Also important is Chapter I monies of the Education Consolidation and Improvement Act and the State Reading Council.

Software selection is ultimately the teacher's choice. They work to inform them what is out there and how to make choices. The teachers receive a budget for teaching materials that they may spend as they choose. Some goals are set by the State Department of Education's "State Learning Outcomes." The state has business education goals that include keyboard skills and spreadsheets

but no set goals for such skills at the elementary or middle school levels.

Two lead teachers were: for computer literacy & math — Judy Jewell (see below) at the High School; and for language arts — Connie Newton.

RESA provides buying services but no demonstration [compare to say Ohio]. Their own RESA maintains ties with the University of Nebraska for a Microcomputer Curriculum Project on math that fits into elementary through high school courses.

In terms of quality of software, Mr. Lawrence saw software as much better than just a few years ago but it still could go a long way. Progress really depended on teacher training as well as "user friendly" software and he knew people were talking about software in the works that was going to be distinctly better. There was certainly some "junk" in the market but what was good or not really depended on a teacher's particular needs and the decision was up to them.

Judy Jewell was a lead teacher for computer literacy & math. She relies heavily on magazine reviews and felt there was no one in the county to talk to. Outside of the county she attended workshops by RESA and the Leaders of Learning in Morgantown. Specific magazines of use included *Electronic Learning* and *Computer Teacher*. She subscribes to *Personal Computing* and *InCider*. She has one computer to work with and her most recent interest has been Broderbund's *Where in the World is Carmen Sandiego?*.

For three years she had $750/year for hardware and software. For the last two years she had only $200/year and has to be very particular, adding about 3 software packages/year.

They have fifteen days set aside as software days where they cycle different computers about and try all the software around. Also the computer club is active during the lunch period.

Most software is copy protected and it is difficult to expose students. They have no network capability but just saw one at the "career center" and thought that would help. In general she wished the usage was more in-depth rather than just sampling.

Information Network #3

WHITE SALMON VLY S D 405-17
PO BOX 157
WHITE SALMON, WA 98672

Actual Location: PARK CENTER, WHITE SALMON, WA

County: KLICKITAT
Telephone: 509-493-1500

This is a: DISTRICT
Type: Regular District

Services:
Bilingual

Enrollment: 1,102
Grade Range: K - 12

Metropolitan Status: Rural
District: WHITE SALMON VLY S D 405-17
Percentage of Children Below the Poverty Line: 9.8%
Total Expenditures for Instructional Materials: $76,100

Per Student Expenditures
(District-Wide)

Textbooks:	$ 20.00 OR MORE (L)
Library Materials:	$ 3.00 - 3.99 (E)
Audiovisual Materials:	$ 2.00 - 2.99 (D)
Teaching Supplies:	$ 30.00 OR MORE (L)
Total Materials —	$ 60.00 - 74.99 (K)

Microcomputer(s):

Apple:	25 - 49
Macintosh:	1 - 9
Radio Shack:	10 - 24
Other:	1 - 9

Personnel:
DUGDALE, PAT
BUS/FINANCE/PURCHASING SUPV

FISK, EDWARD
SUPERINTENDENT
FEDERAL PROGRAM ADMINISTRATOR
CAI SUPERVISOR

KENNEDY, JULIA
BILINGUAL/ESL SUPERVISOR

TERNAHAN, BARRY
SCHOOL BOARD PRESIDENT

The contact point was Mr. Ed Fisk, superintendent, federal program administrator, and CAI Supervisor. They are focussing on IBM PC's and their existing Radio Shack base is really old. They have established computer laboratories to provide computer access. The lead teacher for business education is Janet McCutcheon and his wife uses Southwest Publishing materials in business education. Other lead teachers are Dick Yule and, for industrial arts, Bob Snyder.

A major source of aid is the state's Educational Service Districts (ESDs) and Mr. John Nelson (see below) is a key media contact. They also rely on Mr. Mike Saunders through ESD for

vocational direction.

They have a curriculum committee that deals mostly with issues of hardware. They recognize that most businesses have IBM, that education is predominately Apple IIs and to use Macintosh's for graphic arts. On software they consult with teachers and with John Nelson of ESD and other school districts such as Evergreen, VanCouver, and Castle Rock. There is also a curriculum directors committee (12 members) with people from different districts, some who have computer coordination responsibilities.

There is no real state or federal influence. There are some vocational funds for the vocational efforts of Mike Saunders. To better deal with software they are working to establish a computer committee and encourage teacher initiative.

Mr. Fisk couldn't think of any books that were influential but there were drafts of guidelines that the state department of education were distributing. He thought software was available and there were many "good things" though they may not be specific enough. They do need help evaluating. They will "call around and talk" and rely on sales people. He did want to know more about what was in the public domain [Note: it is often said that the problem with public domain software is the lack of marketing to make people aware of it]. He doesn't preview software personnally but passes it along to the right person. Daily he receives some kind of program or catalogue in the mail.

John Nelson is the media specialist with the sate educational district service (ESD). He operates one of 4 state demonstrations sites for software and has over 1000 pieces of software to demonstrate. Teachers and others will come in and try the materials. The larger vendors will send software free to the collection.

They have developed their own catalogue of the materials and can identify software by subject for visitors. He finds cataloguing math software complicated. He is not judgemental and has no one to do evaluation of what they receive. He considers such a task impossible and finds just dealing with the mail (often six pieces each day) a large task. He would have to have a staff of ten to evaluate and keep up.

One way to achieve quality is to "go with the big guys, the established firms." There is a problem with so many vendors trying to get attention. They do turn to evaluation organizations for information such as MicroSIFT (Northwest Regional Laboratory), EPIE, and Anne Lathrop's Office at San Mateo, CA. He feels there is "no justice" in what gets considered — that someone like Tom Snyder is the exception of the small company with a name. He has seen many companies

rise and die, such as a number of equity supported firms on the Vancouver Stock Exchange. "Someone thinks up a good company name, lots of stock is sold and they hire some people, a couple of years later there's no more money and they close up."

Mr. Nelson is currently running an inservice training class. He has chosen to highlight: certificate maker; crossword magic, printshop, MECC puzzle posters, and Fredwriter (because it is public domain and Bank Street Writer is too expensive). He says the teachers that attend the class will usually go back to their school and buy four of these.

He goes to professional conferences to learn more about software. As for MECC software, they have a contract to distribute (for no fee) the 140 programs for a charge of $350 per district per year. When Mr. Fisk (above) calls about a particular interest, he will send him a current MECC catalogue. Two hundred and forty of the three hundred districts belong to MECC and probably 75% of all software needs are taken care of through MECC.

He really wonders about some new vendor with say "schoolwriter" at $75/copy. He wonders who will buy something that costly and "where do their market people live?"

Things that need to improve are things that support teacher management and programs that aren't limited by 48K of memory. Teachers need software they can customize and add their own information and lists to. He is aware of activities such as Harvard's Educational Technology Center but is looking for the impact of the "nitty gritty" research they are doing.

Mr. Nelson sees the market as very suspect — people promoting are those people with vested interests. Even at conferences, presenters are often paid by vendors. He sees "a lot of dirty stuff going on." Nelson thinks one solution is to have some public entity put six people on a needed item — say a spreadsheet — and then put it into the public domain. The current charge of $150/ copy is too much for schools. He hopes MEEC comes out with spreadsheet and database software so they can obtain it at their arranged rates. In terms of further influence, he has been struck by Marc Tucker's comments that the computer should be looked at as a tool.

Information Network #4

ORANGE WINDSOR SU 30
PO BOX 240
S ROYALTON, VT 05068

County: ORANGE
Telephone: 802-763-8840

This is a: DISTRICT
Type: Supervisory Union

Grade Range: K - 12

Metropolitan Status: Rural
District: ORANGE WINDSOR SU 30

Percentage of Children Below the Poverty Line: NA%
Total Expenditures for Instructional Materials: NA

Per Student Expenditures
(District-Wide)

Textbooks:	$	NA (A)
Library Materials:	$	NA (A)
Audiovisual Materials:	$	NA (A)
Teaching Supplies:	$	NA (A)
Total Materials ----	$	NA (A)

Personnel:
ASHTON, NANCY
K-12 SPECIAL ED SUPERVISOR

FIFIELD, MARY
BUS/FINANCE/PURCHASING SUPV
FEDERAL PROGRAM ADMINISTRATOR
CAI SUPERVISOR

HILLINGER, MICHAEL
SCHOOL BOARD PRESIDENT

SAWYER, RICHARD M.
SUPERINTENDENT

The first contact point was Joanne Sugarman. Her job is primarily general school purchasing and had only recently taken over the position. She was a little surprised that the previous person in her position had been designated the CAI supervisor. Her perspective was based on some interactions with lead teachers over recent software purchases made entirely for Apple computers.

She identified a number of lead teachers and administrators in some of the schools. Theodore Hubbard (see below) was a lead teacher in the use of software in math and science in the Royalton School. The Cumberage school, grades 1-8, relied on an outside firm for some advice. At the Sharon School, elementary, there were a few computers and a new principal, Christopher Slatton (see below). At the Stratford School, grades 1-8, the principal Bob Murray used computers in math and science. In general, the sense was practically no networks of information support.

Christopher Slatton, new principal for Sharon elementary, had no knowledge of who used any computers for anything. He was aware of the Center for Professional Advancement at the Champlain College in Burlington, VT. (see below) which provided teacher training.

Theodore Hubbard uses computers in math and science at the Royalton School. He had just attended an Apple workshop in the fall but had no Apple computers. Funding was very hard to come by. He mainly uses a TRS-80 that he bought himself and Tandy's Scriptset wordprocessing. In math he can't find programs that fit the gifted or talented. He does use visicalc on the RS for business math class. He really wants a Macintosh and laser printer for desktop publishing.

They used to have local computer fairs. There was one out of the Regional Center for Education and Training out of Lebanon, VT, but he has received no recent notice. "Things were exciting for a while." He does receive flyers from the Champlain group (see below) but they are geared to Apple and Commodore and it is embarassing to only have the Radio Shacks. All the magazines he reads are again about different computers. In summary, it is very difficult when you don't have appropriate machines. He was thinking of going to Pet Commodore [Note: In 1987 going from an early RS machine to the Pet Commodore is like going from a push cart to a tricycle.]

Laurie Thompson is Director of the Center for Professional Advancement at Champlain College. She characterized Vermont as a state that 5-7 years ago was considered one of the top 10 states in the use of computers and now is 47th. Her activities have been to extend information and training to the local schools to try to increase usage and awareness.

Their efforts began in 1982 when they operated a summer computer camp. They trained kids 10-16 years and developed a staff. Vermont state government provides no inservice training for teachers in computers so they conceived of a program to go on the road — Computers in the Classroom. Initially they used 20 Commodore Pets but now use mainly Apple IIe's. They approached many private foundations and received $10 to $30 thousand grants from about half a dozen. Commodore provided a matching grant of $14 thousand and Apple donated machines.

They now have accumulated over 1600 pieces of software — over 90% donated.

Their program is operated on a two - four week period at a school. They set up with an instructor and two assistants. They target their materials specifically to the school's curriculum. They teach teachers during the day, and parents and school administrators in the evening. For the first two years they had to be a real spur to the schools but more recently they have not needed to be so all encompassing. They now do what they call Vermont Computer Outreach where they target

more specifically and hold workshops. These include, for example, how to use WP in early elementary; how to use databases in science and math; and items specific for special education. Last year they conducted 34 difference inservice activities of this sort.

Vermont is a rural state and this hampers people in getting together. A mobil operation is needed. The State Department of Education's deputy commissioner is supportive but have provided no funds. They have, however, been designated by the state as The Educational Resource Center. Comparing with other states, she noted that Pennsylvania has a similar program as part of the state government with fourteen sites for computer resource centers. (She cited the Pennsylvania *Information Technology Education for the Commonwealth* and the activities of Barry Barnhart at the Harrisburg Regional Computer Resource Center associated with Harrisburg Community College.)

They have at their facilities a full range of computers. They preview software and computers. They charge teachers a nominal $1/day to use the center. Teachers are permitted to copy public domain software for free. They are also one of 15 NASA Regional Teacher Resource Centers. Under this program they provide educational information on math, science, and especially space science and have a collection of 150 video tapes, 1000 slides, and lesson plans.

They preview everything they receive and give things a rating. They have one person who does this full time. They judge by whether the software is user friendly, whether it does what it promises, and whether it is a "good" educational tool. They have a printout of all products with the score – A,B,C,D. Each week they will receive up to 15 new pieces. They are regularly sent software for their preview center by most publishers and sometimes have to initiate the process with a new company. They receive magazines and direct mail catalogues and are designated in T.H.E. as a resource center.

Ms. Thompson is looking forward to "incredible technologies" that are now coming out. She cited the work of Silver Platter, a CD ROM firm, that has brought out the ERIC database on CD ROM. She sees considerable potential for interactive videodisc, the use of satellite to bring courses to rural areas, and the use of large information databases.

In terms of national conferences, they have attended so many in the past, that they are much more selective. They will be going to the Washington, DC conference on interactive videodisc and to the InfoMart exposition in Dallas.

Earlier in their history they were one of 28 sites for an IBM Model Schools program which provided training for 25 teachers. She felt IBM had neglected the schools in the last few years but this year has been much better. She is intriqued by their PAL system — voice, computer and

interactive video, their literacy program, and their "built-in curriculum" – essentials of reading, writing and math. She did feel write-to-read was receiving mixed reviews.

There was also substantial activity in Vermont for computers in high school business programs.

Currently they are studying where they are and where they should go next. Recently an informal organization called the Champlain Vally Educational Consortium was formed and about 50 people attend their meetings. It is mostly a volunteer group but did receive some state funds to conduct a survey of the state. They have been interviewing teachers about "technology." They have found a real diversity in use and in teachers interests and willingness to try something new. Only some teachers today are writing their own programs on computers. Only one school in particular has been very futuristic, from the impetus of the superintendent, in the use of satellite communications and electronic bulletin boards.

In closing she also suggested as an influence, "Utah – Information Technology Demonstration Center" at Salt Lake (801-533-4774).

Information Network #5

LEANDER IND SCHOOL DISTRICT
PO BOX 218
LEANDER, TX 78641

Actual Location: 401 S WEST STREET, LEANDER, TX

County: WILLIAMSON
Telephone: 512-259-1113

This is a: DISTRICT
Type: Regular District

Enrollment: 4,251
Grade Range: K - 12

Metropolitan Status: Rural
District: LEANDER IND SCHOOL DISTRICT

Percentage of Children Below the Poverty Line: 9.6%
Total Expenditures for Instructional Materials: $179,800

Per Student Expenditures
(District-Wide)

Textbooks:	$ 18.00 - 19.99 (K)
Library Materials:	$ 3.00 - 3.99 (E)
Audiovisual Materials:	$ 1.00 - 1.99 (C)
Teaching Supplies:	$ 18.00 - 20.99 (G)
Total Materials ---	$ 40.00 - 44.99 (G)

Microcomputer(s):

Apple:	50 - 99
Radio Shack:	1 - 9
Other:	10 - 24

Personnel:

AKIN, MONTA
K-12 CURRIC/INSTRUCT SUPV
SUPERVISOR OF GIFTED/TALENTED

BIBLE, A. C.
SCHOOL BOARD PRESIDENT

BUCHANAN, DONNIS
BUS/FINANCE/PURCHASING SUPV

DAVENPORT. ELAINE
PUBLIC INFORMATION SUPV

DICKSON, HUBERT
VOCATIONAL EDUC SUPV

GLENN, THOMAS J.
ASSISTANT SUPERINTENDENT
SEC GUIDANCE COUNSEL SUPV

HALSTEAD, JAN
K-12 SPECIAL ED SUPERVISOR
PSYCHOLOGICAL TESTING SUPV

HOPSON, FRED
SUPERINTENDENT
FEDERAL PROGRAM ADMINISTRATOR

MCLEROY, SANDRA
LIBRARY SERVICES SUPV

MOLLENHAUER, ISABEL
TEACHER PERSONNEL SUPV

RICE, MAGGIE
K-12 CURRIC/INSTRUCT SUPV
CAI SUPERVISOR

WALLACE, ANN
RESEARCH/DEVELOPMENT SUPV

The first contact point was with Maggie Rice who was designated by MDR as the CAI Supervisor. She had little knowledge of computer use and suggested contacting Eric Haug (see below) for secondary school usage and Linda Seden for elementary school use.

Eric Haug operates a TI (Texas Instrument) computer laboratory and is changing over to IBM [Note: TI left the microcomputer business nearly five years ago and almost all software for the machine was developed in the time prior to that.] He is on many mailing lists and receives catalo ues from Sunburst, MECC, etc. If he finds something of interest he orders it on a preview basis. He noted, however, that Texas has been extremely short of funds in the last few years because of the oil situation. Since so many kids are interested in computer science they are going to IBM.

They don't rely on preview evaluations but read descriptions in magazines and magazine reviews regularly. A nearby district is larger and he talks with their CAI Supervisor. He has attended a closeby computer convention – Texas Computer Education Association Conference and usually sends a computer science teacher to attend. He also attends workshops by companies and vendors to see how software can be used in a classroom. He talks with other math teachers and also turns to the Learning Exchange for Instructional Excellence, located in Kansas City.

His role in the curriculum office is to write, do staff development and encourage teachers. He feels very few teachers stay up to date. Of course, there is no TI software to discover. The business teachers find some things of interest. Further development is done by Jan Hopkins in the High School who will copy articles and send to other teachers.

The local district requires computer literacy and Linda Seden is in charge of that activity. Also, the state requires keyboard literacy at the jr. high level as part of the state's Essential Elements.

Often decisions are made by Jan Hopkins of the High School with the principal, Charley Rouse. They send their recommendations to the central office and this is presented to the assistant superintendent, Thomas Glenn. They are currently considering having an Apple Computer to roll around for math use.

Information Network #6

JIM NED CONS IND SCH DISTRICT
PO BOX 9
TUSCOLA, TX 79562

Actual Location: MATH & GARZA STREET, TUSCOLA, TX

County: TAYLOR
Telephone: 915-554-7577

This is a: DISTRICT
Type: Regular District

Services:
Bilingual

Enrollment: 709
Grade Range: K - 12

Metropolitan Status: Suburban
District: JIM NED CONS IND SCH DISTRICT
Percentage of Children Below the Poverty Line: 8.4%
Total Expenditures for Instructional Materials: $27,000

Per Student Expenditures
(District-Wide)

Textbooks:	$ 16.00 - 17.99 (J)
Library Materials:	$ 3.00 - 3.99 (E)
Audiovisual Materials:	$ 1.00 - 1.99 (C)
Teaching Supplies:	$ 15.00 - 17.99 (F)
Total Materials ---	$ 35.00 - 39.99 (F)

Microcomputer(s):
Radio Shack: 25 - 49

Personnel:
DAVENPORT, CURTIS
SUPERINTENDENT
CAI SUPERVISOR

HUGHES, CAROL
BILINGUAL/ESL SUPERVISOR

SHARP, LEONARD
BUS/FINANCE/PURCHASING SUPV
FEDERAL PROGRAM ADMINISTRATOR

TANKERSLEY, LARRY
SCHOOL BOARD PRESIDENT

The designated CAI supervisor, Curtis Davenport, was no longer with the district and the first contact point was Barbara Beasley who teaches math and physics in the high school. Another contact in the elementary school was Dana Fowler (see below). Ms. Beasley's main source of information is software catalogues which she is deluged by because there are so many. She also turns to computer magazines. These include *Teaching and Computers*, Tandy's *AD Micro*, *T.H.E.*, and *Learning and Computing*.

She uses one program in data processing that was a suggestion from a text book company. Her husband teaches computers at MacMurray College in Abeline who makes recommendations.

She also receives materials passed along by the superintendent.

Areas receiving attention are the state required keyboarding skills in 7th and 8th grades, computer math, data processsing, and physics as available. They really need spreadsheet software.

For more information she uses the reader service check-offs in magazines. They also access shareware through MacMurray of which some is useful in wordprocessing. They basically can't think of doing much given that state funds have been "cut to the bone." About the only thing she has ordered recently was a copy of Bank Street Writer.

Ms. Dana Fowler works with computers in K-8, especially grades 7-8. With some help from some programmers they have even written some of the software they use. One of these helps provide tests on the computer and calls up scores and prints these out. Another one teaches concepts of *less than*, *greater than*, and "color words." They mainly have TRS-80's, 3's and 4's on a network. It was the school board that decided to get the TRS' – on sale for a 25% discount. They have wordprocessing on the network (Scriptset) which includes eight machines in all. A major concentration is the keyboard literacy required by the state. They also teach use of spreadsheets and databases. But her visicalc is not network software so it must be used on individual machines. She learned about Alpha key through a friend. She wants to put Logo on the network but she has no funds. She has gone so far as to buy software from her own money to make available. For adult vocational education there is more available including Lotus and Wordstar.

Her current concern is that Radio Shack is not making the Model 4's anymore and software is scarce. She sees IBM now going to school districts [see discussion on IBM's strategies in the market study section of the report]. She sees a real need for five to ten year, low interest financing for machines and software.

To encourage teachers to go to conferences the school system will pay for a substitute teacher but this is still hard for teachers to do. She is currently taking a correspondence course in computer math from Texas Tech. Other sources of information are books about Lotus, Wordstar, etc., Tandy's *AD Micro Magazine*, and the *Computer Shopper*.

She really feels as though they are beating their heads against a wall. There is very little software for Radio Shack computers and very little for networks. They are thinking of going to IBM with financing.

Earlier, one source of information was a computer consultant, Cindy Love from Abeline who provided one professional day for a while. The Eula School district has been very progressive with

her assistance and have both Apple labs and IBM labs. They are working with a package from Israel that teaches language and math and includes management to know the level of accomplishment by the students.

Information Network #7

AMARILLO IND SCHOOL DISTRICT
910 WEST 8TH STREET
AMARILLO, TX 79101

County: POTTER
Telephone: 806-376-5531

This is a: DISTRICT
Type: Regular District

Services:
Bilingual
16MMFILM

Enrollment: 27,368
Grade Range: PK - 12

Metropolitan Status: Urban
District: AMARILLO IND SCHOOL DISTRICT

Percentage of Children Below the Poverty Line: 12.5%
Total Expenditures for Instructional Materials: $1,875,300

Per Student Expenditures
(District-Wide)

Textbooks:	$ 20.00 OR MORE (L)
Library Materials:	$ 5.00 - 5.99 (G)
Audiovisual Materials:	$ 2.00 - 2.99 (D)
Teaching Supplies:	$ 30.00 OR MORE (L)
Total Materials ----	$ 60.00 - 74.99 (K)

Microcomputer(s):

Apple:	500 - 999
Macintosh:	50 - 99
IBM:	50 - 99
Commodore:	25 - 49
Radio Shack:	10 - 24
Other:	50 - 99

Personnel:

BIGHAM, H DEAN
- BUSINESS EDUCATION SUPV
- VOCATIONAL EDUC SUPV
- INDUSTRIAL ARTS SUPV
- HOME EC/CONSUMER ED SUPV
- SEC CAREER EDUC SUPV
- DISTRIBUTIVE ED SUPERVISOR

BOWERMAN, KAY
- CAI SUPERVISOR

CARTER, MARY RUTHE
- SEC ENGLISH/LANG ARTS SUPV

CRAIGEN, G WAYNE
- SUPERVISOR OF GIFTED/TALENTED

DEFEVER, DYALTHIA
- ELEM SOCIAL STUDIES SUPV
- ELEM SCIENCE SUPERVISOR

ELDERS, CYNTHIA
- SEC READING SUPERVISOR
- SEC REMEDIAL READING SUPV

FUQUAY, MERTON
- ASSISTANT SUPERINTENDENT
- TEACHER PERSONNEL SUPV

GALLAWAY, VIRGINIA
- BUS/FINANCE/PURCHASING SUPV

LEGACY, JUNE
- SEC CURRIC/INSTRUCT SUPV
- ASSISTANT SUPERINTENDENT

LIVELY, LAMAR
- K-12 CURRIC/INSTRUCT SUPV
- FEDERAL PROGRAM ADMINISTRATOR
- ASSISTANT SUPERINTENDENT

LUNSFORD, BETTIE
- ELEM ENGLISH/LANG ARTS SUPV
- ELEM READING SUPERVISOR
- ELEM REMEDIAL READING SUPV

MCGILL, HELEN J.
- EARLY CHILDHOOD ED SUPV
- K-12 SPECIAL ED SUPERVISOR

MILLS, EARL
SEC CURRIC/INSTRUCT SUPV
ASSISTANT SUPERINTENDENT
BUSINESS EDUCATION SUPV
SEC FOREIGN LANGUAGE SUPV

REYNOLDS, JIM S.
SEC SCIENCE SUPERVISOR

ROBERTS, DON R.
SUPERINTENDENT

ROBERTSON, DONNA
PUBLIC INFORMATION SUPV

SIMMS, JIM
SCHOOL BOARD PRESIDENT

STEPHENS, SHERRON S.
K-12 SPECIAL ED SUPERVISOR

STULTS, MARY LOU
SEC SOCIAL STUDIES SUPV

TRUITT, JOANNE
MEDIA SVCS/AV/LIBRARY SUPV

WALKER, DWAINE
BUS/FINANCE/PURCHASING SUPV
ASSISTANT SUPERINTENDENT

The first contact was the Superintendent's assistant. She indicated that most of the software came from Sunburst. Lead teachers included David Webb in 5th grade who teaches a computer course and Joanna Hawkins who teaches English and Social Studies.

The main contact was Kay Bowerman who was the CAI supervisor. She indicated that they had an odd collection of computers including Radio Shack and Commodore that were mainly donated by the PTA. [Note: it has been noted by a number of researchers that in some cases donated equipment is often not worth the trouble if it is not part of planning for software availability.] The district elementary and junior high schools did have Apple computers with a greater avialability of software. There were also IBM computers at the high school since this was the business standard. They also had a writing program at the high school with the Macintosh and MacWrite.

Ms. Bowerman indicated that the Department of Technology of the State of Texas was working on an approved software list [Note: see the literature and discussion on State Adoption policies].

A major source of information is the reviews in journals and *Only the Best.* They preview everything before they purchase it. For elementary use they have developed an approved software list. This came out of discussions by a group of teachers, principals, and coordinators. At the elementary level, district wide, they use a typing tutor program and the same wordprocessing – Bank Street Writer. They also use Apple Logo. Some individual schools with bilingual interests have obtained suitable software.

They usually fund software through "contingency funds" on 30-day preview where the product is forwarded to the teacher for preview. In the 7th and 8th grades there is activity due to the state requirement for computer literacy and there is a proposed keyboarding skill requirement as part of the state vocational master plan.

There are 20 regional service centers throughout Texas and at their center, #16, they can preview software from Sunburst, MECC and others. Mr. Rusty Owen provides guidance at the center and workshops. Nonetheless, they find it much easier to order and preview software on site.

Other sources of information include the large annual conference by the Computer Education Association and other city and county annual events. They study offerings by IBM and Apple and the social studies department expressed interest in Tom Synder's Decisions, Decisions ...

[The overall impression was a very hands-on knowledgeable school system. Further discussion with Mary Lou Stults, the Secondary Social Studies Supervisor, added no additional information.]

Information Network #8

ONEIDA SPECIAL SCHOOL DISTRICT
PO BOX 1002
ONEIDA, TN 37841

Actual Location: CHURCH AND BANK STREETS, ONEIDA, TN

County: SCOTT
Telephone: 615-569-8912

This is a: DISTRICT

Type: Regular District

Services:
16MMFILM

Enrollment: 1,266
Grade Range: K - 12

Metropolitan Status: Rural
District: ONEIDA SPECIAL SCHOOL DISTRICT
Percentage of Children Below the Poverty Line: 30.6%
Total Expenditures for Instructional Materials: $49,100

Per Student Expenditures
(District-Wide)

Textbooks:	$ 16.00 - 17.99 (J)
Library Materials:	$ 4.00 - 4.99 (F)
Audiovisual Materials:	$ 3.00 - 3.99 (E)
Teaching Supplies:	$ 12.00 - 14.99 (E)
Total Materials ----	$ 35.00 - 39.99 (F)

Microcomputer(s):
Apple: 25 - 49

Personnel:
BLEVINS, VESTER
SCHOOL BOARD PRESIDENT

PAYNE, VICKEY
K-12 SPECIAL ED SUPERVISOR
SUPERVISOR OF GIFTED/TALENTED

MILLER, LARRY (previously SHOFFNER, CHARLES E.)
SUPERINTENDENT
FEDERAL PROGRAM ADMINISTRATOR
CAI SUPERVISOR

STRUNK, BARBARA
CHAPTER I/ECIA COORDINATOR

THOMPSON, ROY
K-12 CURRIC/INSTRUCT SUPV
CHAPTER II/ECIA COORDINATOR
MEDIA SVCS/AV/LIBRARY SUPV

JEFFERSON ELEMENTARY SCHOOL
ANDREW JOHNSON HIGHWAY
JEFFRSON CITY, TN 37760

County: JEFFERSON
Telephone: 615-475-4712

This is a: PUBLIC SCHOOL
Type: Elementary School

Services:
Special Education
Computer Assisted Instruction
Kindergarten

Enrollment: 817
Grade Range: K - 5

Metropolitan Status: Rural
District: JEFFERSON CO SCHOOL DISTRICT

Microcomputer(s): Apple; Radio Shack
Total Number of Microcomputers: 1 - 9 (B)

Per Student Expenditures
(District-Wide)

Textbooks:	$ 18.00 - 19.99 (K)
Library Materials:	$ 4.00 - 4.99 (F)
AudioVisual Materials:	$ 2.00 - 2.99 (D)
Teaching Supplies:	$ 9.00 - 11.99 (E)
Total Materials —	$ 35.00 - 39.99 (F)

Personnel:
LINDSEY, N.
LIBRARIAN

MILLER, LARRY
PRINCIPAL

The first contact was with Mr. Larry Miller, currently Superintendent of the Oneida Special School District. Since he only recently left being principal of the Jefferson City Elementary school for the position, the discussions mainly focused on his experiences and networks related to Jefferson City.

He had been involved in 1984 with the IBM Grant to the state of Tennessee on the write-to-read program. His basic feeling was his home state of Florida was far more progressive at the elementary level than Tennessee. His own interest, as principal, was in an accounting system for a TRS-80 Model 3. He finally had a program written to meet the Tennessee finance manuals. They had Radio Shack computers at the beginning and acquired 3rd party software as well as Tandy's own. Now only attendance and discipline is on the RS since they have liked the software they have.

A state wide program brought in Apple computers to all schools on the basis of one computer for every one teacher. The state program was generally termed "Computer Skills Next" and was part of a Reform Act of 1984 for K-12 education. The three aims were: Basic skills; Computer

skills next; and lifetime job skills. The Apple computer program was on a one-time basis though they have negotiated prices for additional Apple Computers for schools to purchase. Software has been ignored by the state except for some IBM based administrative software for school management. His school supplemented this program with an additional 3. The state also made arrangements for MECC software.

Software is provided on request and the state pays the licensing fee for the entire state. Most of the specific decisions were made by the school librarian – Ms. Nancy Lindsey (see below). The librarian worked with teachers in their subject areas, went through catalogues, and obtained demo disks for preview.

Other than MECC software they tend to go to the major textbook companies that have products consistent with textbooks such as Silver Burdett & Ginn, and Houghton-Mifflin. They also have been interested in Spinnaker Software.

For information he attends several conferences including those of area sales from a major textbook publisher and IBM in Knoxville. Other sources are openhouses through the State Educational Associations where there are vendor booths and advertisements. To provide teachers with information, they permit professional leave and pay some expenses on an ad hoc basis. IBM would provide 2 weeks of training on their write-to-read program.

In general, it is very difficult to expand and wishes hardware were less expensive. He thought that MECC provided "fairly decent inexpensive software."

Nancy Lindsey is the librarian at Jefferson City Elementary School K-5 with over 700 students. They have 3 computers and 29 home rooms. They are only just building up a computer program. Sources of information include two Apple Magazines – *Nibble* and *InCider*. She has a vocational school friend who goes to workshops and they compare notes. Her interests include software and all media. In particular she has been alert for alphabetic enhancement software for K and 1st grade that provides animation to see letters and uses something from MECC.

She works with teachers to make them more at ease with computers and word-of-mouth is very important. Some of the use is motivated by an optional state program for 5th grade on basic skills mix. The library performs an important function to coordinate and introduce teachers to software. She sees many teachers getting pleased about computers particularly with software that provides directions on the screen and this also helps more advanced students work independently. They are enthusiastic about doing more.

Information Network #9

SPARTANBURG SCHOOL DISTRICT 6
1493 W O EZELL BLVD
SPARTANBURG, SC 29301

County: SPARTANBURG
Telephone: 803-576-4212

This is a: DISTRICT
Type: Regular District

Services:
16MMFILM

Enrollment: 7,722
Grade Range: K - 12

Metropolitan Status: Rural
District: SPARTANBURG SCHOOL DISTRICT 6

Percentage of Children Below the Poverty Line: 11.0%
Total Expenditures for Instructional Materials: $523,900
Per Student Expenditures
(District-Wide)

Textbooks:	$ 20.00 OR MORE (L)
Library Materials:	$ 5.00 - 5.99 (G)
Audiovisual Materials:	$ 2.00 - 2.99 (D)
Teaching Supplies:	$ 30.00 OR MORE (L)
Total Materials ----	$ 60.00 - 74.99 (K)

Microcomputer(s):

Apple:	25 - 49
IBM:	1 - 9
Commodore:	1 - 9
Radio Shack:	25 - 49
Other:	1 - 9

Personnel:
ANTLEY, JUDITH
K-12 MATH SUPERVISOR

BLACKWELL, GARY
BUS/FINANCE/PURCHASING SUPV

BROOME, HAROLD K.
SEC CURRIC/INSTRUCT SUPV
ASSISTANT SUPERINTENDENT
TEACHER PERSONNEL SUPV

COX, SUSAN
ELEM ENGLISH/LANG ARTS SUPV
ELEM READING SUPERVISOR

HAYES, DAVID
BUS/FINANCE/PURCHASING SUPV

KING, THOMAS
INSERVICE TRAINING SUPV

MARTIN, FLORIDE
SUPERINTENDENT
CAI SUPERVISOR

REEVES, JOHN
K-12 SPECIAL ED SUPERVISOR

ROBINSON, BERTICE
K-12 REMEDIAL READING SUPV

WEEKES, LOUISE
ELEM CURRIC/INSTRUCT SUPV
ASSISTANT SUPERINTENDENT
TEACHER PERSONNEL SUPV
PUPIL PERSONNEL SUPERVISOR

WHITLOCK JR, MILES
SCHOOL BOARD PRESIDENT

WIDEMAN, GEORGE
FEDERAL PROGRAM ADMINISTRATOR
BUSINESS EDUCATION SUPV
VOCATIONAL EDUC SUPV
INDUSTRIAL ARTS SUPV
HOME EC/CONSUMER ED SUPV
K-12 CAREER EDUC SUPV

WOFFORD, JOSEPH
MEDIA SVCS/AV/LIBRARY SUPV

Mr. Harold Broome was the first contact point. His first thought on the subject was their state attendance and scheduling system known as the OSIRIS Pathways Project. Much of their educational computing is dominated by a Computer Curriculum Corporation (CCC) System they brought in 3 years ago into all 14 schools. The state's Educational Improvement Act provided a financial allotment per student for those below 25% on the state test for: Reading and Math. First they used the funds to hire teacher aids to tutor these students, then they went to CCC partly because they would have the equipment after the money ran out. The decision to go this way was decided at the district level with the assistance of district office staff, the Chapter 1 coordinator,

fourteen principals and the education board. Many companies came in to show their approaches and they deliberated for about a year. They are pleased with the results and have shown a "good gain" in reading and math. The system has been used by gifted and adult education, but only on a very limited basis. It is operated with 6, 16, or 24 to a room with ten minute sessions. Results of student's progress are provided to teachers at the end of each week.

Many of the schools have mainly bought Apple computers. Some of the teachers are using MECC software but there is nothing uniform as the decision is left to the principals. Lead principals include Bob Pettis (see below) at Woodland Heights and Bill Dempsey (see below) at the Dorman Schools.

He views MECC software as dependable for information. He receives many brochures and pamphlets from companies. There are also some people in the State Department of Education to consult with. Their previous superintendent, Dr. Floride Martin, went on to the state governor's office in education.

Mr. Bill Dempsey, Principal at Woodland Heights, described their efforts as haphazard. No one was coordinating the use for teachers and, yes, MECC software was being used in the primary and middle schools. He receives request from teachers for ever more machines. They just received vocational funding for computers. Funding otherwise is uncoordinated and he is not sure if any coordination would really be good. One must be able to own and keep these things to be able to assess them. Mr. Dempsey sees the problem as not the availability of software but the availability of course time for teachers to learn. Yes, they use the CCC minicomputer system for remedial students, some pre-vocational use, and a little science. There is no use in English, social studies, and most of the sciences.

For information he sees many flyers and catalogues in the mail which he goes through. Preview is available from an ETV (Educational TV) Lab. but its not practical as it is 100 miles away.

Mr. Dempsey would like to see software catalogued like the Library of Congress with a low cost dial-in availability. [Note: this is a potential application of a subsidy that reduces the cost of some of the existing services.]

He sees the free market working fairly well. He has seen controls by the state and the bid method producing inferior products since they often award to the lowest bidder. He has seen benefits from states coordinating large blocks of purchases and obtaining a quantity buying discount.

As for support of personnel to aid the process, he would recommend that such a person be no higher than the district level and ideally on site – someone who knows the operation and has time and knowledge to review. The person could train teachers and advise. Perhaps Federal funding for such a person would be a good thing.

Mr. Bob Pettis is principal at Woodland Heights. Some of the uses include Bank Street Writer in 2nd grade and use of drill and practice. At the beginning a few of them were trained at the University of South Carolina (U.S.C.). A state law provides for funding teacher training and he has taken two graduate courses. They are MECC members through the Southeastern Educational Laboratory (SEED) at Raleigh and for $6-8 thousand they can copy MECC software. The Laboratory also provides them with preview facilities. There is also a large laboratory for preview at the University of South Carolina at Columbia and a branch at Spartansburg. The state has formed 3 committees to evaluate and recommend software for basic skills in science, language arts, and math.

Word-of-mouth is a common way of identifying useful software. One of the teachers at U.S.C., Dr. Judith Prince, who teaches the graduate "proviso" courses for teachers, is a good source of information. Also a new state organization called the South Carolina Computer Consortium has formed and conducts several conferences for educators. Magazines he consults include *Education and Computers*, *Computer Learning*, and *A+*. There is also a resource person that people call within the county (which covers 7 school districts) who is known by his courses.

He feels, in the way of software, he can "get most anthing they need," especially through the MECC arrangement. He sees that they are "just beginning" and "beginning to realize that the computer can help do something."

Information Network #10

LONE GROVE SCHOOL DISTRICT 32
PO BOX 1330
LONE GROVE, OK 73443

Actual Location: 201 HIGHWAY 70 WEST, LONE GROVE, OK

County: CARTER

Telephone: 405-657-3131

This is a: DISTRICT
Type: Regular District

Services:
16MMFILM

Enrollment: 1,292
Grade Range: K - 12

Metropolitan Status: Rural
District: LONE GROVE SCHOOL DISTRICT 32
Percentage of Children Below the Poverty Line: 10.9%
Total Expenditures for Instructional Materials: $68,700

Per Student Expenditures
(District-Wide)

Textbooks:	$ 16.00 - 17.99 (J)
Library Materials:	$ 5.00 - 5.99 (G)
Audiovisual Materials:	$ 3.00 - 3.99 (E)
Teaching Supplies:	$ 27.00 - 29.99 (K)
Total Materials ---	$ 50.00 - 54.99 (I)

Microcomputer(s):

Apple:	25 - 49
Radio Shack:	1 - 9

Personnel:
BEAUJON, JO
MEDIA SVCS/AV/LIBRARY SUPV

DAUGHERTY, SUE
SEC GUIDANCE COUNSEL SUPV

DUNHAM, DARRELL
SCHOOL BOARD PRESIDENT

MAPP, CELESTINE
CAI SUPERVISOR

SCHNEE, RONALD
SUPERINTENDENT

WEBB, CHRIS
VOCATIONAL EDUC SUPV
INDUSTRIAL ARTS SUPV
HOME EC/CONSUMER ED SUPV

The contact point was Ronald Schnee, the superintendent. They operate computer laboratories with all Apple computers in the elementary and high school. They use software on math, science, social studies, and reading.

He identifies software through the catalogues of vendors and reads *A+* for the Apple II. They preview all software and will not purchase software that they cannot preview on site.

He considers magazine review unreliable and lets teachers select software with a budget to order and preview. They give written reviews back to publishers on those they return. [Note: this is a suggested practice in the evaluation guidelines issued by some of the preview organizations.]

A lead teacher is Celestine Mapp (unavailable to contact) who teaches math. People in the junior high school rely on her to find software. In each building they provide all teachers with 8 hours of training and 3 teachers with 20 hours. They applied for federal monies to do this under Title II and hired a consultant to come into the labs.

The State Department of Education has a computer lab where they can preview software but this is in Oklahoma City, 2 hours off, and too far away. They prefer previewing through the mail. Educational TV is not involved though he thought that might be useful.

In general, he sees the computer as an occasional tool and doubts it will receive everyday use except in math. He sees it as suited to introduce concepts and do drill and practice. Other tools such as VCR tapes are more useful in English and social studies.

Information Network #11

FORT LORAMIE LOCAL SCH DIST
3640 STATE RT 705
FORT LORAMIE, OH 45845

County: SHELBY
Telephone: 513-295-3931

This is a: DISTRICT
Type: Regular District

Services:
16MMFILM

Enrollment: 767
Grade Range: K - 12

Metropolitan Status: Rural
District: FORT LORAMIE LOCAL SCH DIST

Percentage of Children Below the Poverty Line: 7.8%
Total Expenditures for Instructional Materials: $23,300
Per Student Expenditures
(District-Wide)

Textbooks:	$ 8.00 - 9.99 (F)
Library Materials:	$ 3.00 - 3.99 (E)

Audiovisual Materials:	$ 1.00 - 1.99 (C)
Teaching Supplies:	$ 15.00 - 17.99 (F)
Total Materials ----	$ 30.00 - 34.99 (E)

Microcomputer(s):

Apple:	1 - 9
Radio Shack:	1 - 9

Personnel:

ARGABRITE, JERRY
SUPERINTENDENT
FEDERAL PROGRAM ADMINISTRATOR
CAI SUPERVISOR

BARHOUST, NELSON
SCHOOL BOARD PRESIDENT

COURTNEY, WILLIAM
LIBRARY SERVICES SUPV

DELOYE, LARRY
SCHOOL BOARD PRESIDENT

SIMON, JULIE ANNE
BUS/FINANCE/PURCHASING SUPV

SMITH, CHARLOTTE
CHAPTER I/ECIA COORDINATOR

The first contact was Mr. Jerry Argabrite, superintendent of the Fort Loramie Local School District which has a couple of high schools, a couple of junior highs and one elementary school. They depend on their media specialist, William Courtney (see below), for day-to-day contact with software. They belong to MECC through the Soutwestern Ohio Instructional Television Association at Miami University in Oxford, Ohio (SOITA). The facilities provide for previewing of software.

One way they learn about software is to study other schools and visit their programs. The state mainly provides administrative software (attendance, etc.) that they develop or buy. Each school is generally responsible to keep up-to-date on software. There are a few budgets including the media account and the district account that purchases come out of and the teachers must always preview before they purchase.

He sees that the more computer software is used the more valuable it appears. He can see that the publishing firms might be quite unsure about the market.

William Courtney is the library services supervisor for the district. One of his activities is to write a newsletter that he passes out to the teachers. He will often include a printout of a sample of some software. He emphasizes teacher utilities in the newsletter such as gradebook programs or "Certificate Maker." He holds seminars for teachers and shows things like the new Bank Street Writer III and a dictionary disk program. He relies on EPIE reviews, considers most advertisements "trash" and relies more on magazine reviews. They must be given a 30 day preview priviledge or they won't buy from the publisher.

They are active in the use of instructional TV for K-8 and are able to get MECC software under the arrangement with SOITA for $3 a piece. SOITA does seminars and also helps in computer repairs. He considers the 55 mile distance to Oxford too far to use their preview facilities.

He sees a split between seeing computer software as part of the library or as part of the curriculum. He receives requests from teachers for help and will work to find something to fit their need. He has not seen really much from the large textbook publishers except for Scholastic (e.g. Microvene – adventures for kids).

In general, he sees preview facilities as too far off and insists on the 30-day preview through the mail.

Information Network #12

BEDFORD CITY SCHOOL DISTRICT
475 NORTHFIELD ROAD
BEDFORD, OH 44146

County: CUYAHOGA
Telephone: 216-439-1500

This is a: DISTRICT
Type: Regular District

Services:
Bilingual

Enrollment: 4,027
Grade Range: K - 12

Metropolitan Status: Urban
District: BEDFORD CITY SCHOOL DISTRICT

Percentage of Children Below the Poverty Line: 5.2%

Total Expenditures for Instructional Materials: $465,700

Per Student Expenditures
(District-Wide)

Textbooks:	$ 20.00 OR MORE (L)
Library Materials:	$ 13.00 - 13.99 (O)
Audiovisual Materials:	$ 5.00 - 5.99 (G)
Teaching Supplies:	$ 30.00 OR MORE (L)
Total Materials —	$ 75.00 OR MORE (L)

Microcomputer(s):

Apple:	50 - 99
Radio Shack:	10 - 24
Franklin:	1 - 9
Other:	1 - 9

Personnel:

BOLLINGER, PATRICIA
BUS/FINANCE/PURCHASING SUPV

BURGESS, ROGER
MEDIA SVCS/AV/LIBRARY SUPV
CAI SUPERVISOR

FRIES, FRED
BUS/FINANCE/PURCHASING SUPV

HESTON, JEANNETTE
ELEM CURRIC/INSTRUCT SUPV

KOSTANSEK, PAUL
SEC GUIDANCE COUNSEL SUPV
ACADEMIC TESTING SUPV

LEDONNE, FRANK
SUPERINTENDENT

MURRAY, WALLACE
ELEM CURRIC/INSTRUCT SUPV
FEDERAL PROGRAM ADMINISTRATOR
K-12 SPECIAL ED SUPERVISOR
SUPERVISOR OF GIFTED/TALENTED

ORRIS, ROBERT
BUSINESS EDUCATION SUPV
VOCATIONAL EDUC SUPV
INDUSTRIAL ARTS SUPV
HOME EC/CONSUMER ED SUPV
DISTRIBUTIVE ED SUPERVISOR

SALZANO, AL
SCHOOL BOARD PRESIDENT

SIEGEL, RUTH
SEC CURRIC/INSTRUCT SUPV
ACADEMIC TESTING SUPV

SOPPEL, JUDITHE
PUBLIC INFORMATION SUPV

WALKER, GARY
ASSISTANT SUPERINTENDENT
INSTRUCTIONAL TV SUPV
TEACHER PERSONNEL SUPV
ACADEMIC TESTING SUPV

The first contact was Jean Wich, Assistant to Wallace Murray (see above). The CAI supervisor was unavailable for the month so the discussions mainly concentrated on consortium and state contacts. Activity in Mr. Murray's office included previewing software by mail, reviewing books and magazines, and contacts with the Educational Computer Consortium of Ohio (see below).

The Educational Computer Consortium of Ohio (ECCO) is directed by Alice Fredman and was established in 1981 to help classroom teachers, administrators, parents and other users of educational courseware become familiar with the broad area of educational technology materials. The nonprofit organization is funded by membership which includes 80 school districts (for a fee of $100 to $1000), 800 individual teacher memberships ($20), 30 commerical members ($100), 300 families ($40), 7 universities ($100), and 8 nonprofit organizations ($50). They operate a resource center with over 1000 packages and act as a lending library to members where items can be borrowed for 2 weeks. Public domain software may be freely copied.

Their holdings include: Apple commercial software, Apple MECC commercial software, Apple public domain software, Atari 800 commercial software, Atari 800 public domain software, Commodore 64 commercial software, Commodore 64 public domain software, IBM-PC commercial software, IBM-PC public domain software, the Northeast Ohio Apple Corps. (NEOAC) hardcopy library, Radio Shack Color Computer commercial software (on cassette), TI 99/4A commercial software (command modules), TRS-80 Model III commercial software, TRS-80 Model III public domain software, a Logo bibliography, journals and AV materials, courseware evaluations, and curricula and courses of study.

They subscribe to the following evaluation services: *EPIE – Micro-Courseware PRO/FILEs, Educational Software Preview Guide, The Journal of Courseware Review, Personal Software Magazine, Courseware Report Card, MicroSIFT evaluations* (Northwest Regional Educational

Laboratory), *Digest of Software Reviews: Education, Only the Best: The Discriminating Software Guide for Preschool - Grade 12, Courseware Review reviewed by the California Library Media Consortium, School Microware Reviews, Whole Earth Software Review*, and the *Teacher and Student Field Testing of Microcomputer Software Vol. 2* prepared by Northwestern Consolidated School District in cooperation with the School of Library and Information Science, Indiana University.

They also have the following directories: for IBM — *The PC-SIG Library: A Directory of Public Domain and User Supported Software for the IBM-Pc, PCjr., and compatibles, IBM Personal Computer Education Software Products, The IBM PC, XT, PCjr Educational Software Directory, IBM Personal Computer & XT: The Software Guide, Guide to Learning: Resources for Users of IBM Personal Computers, Educational Software Directory for IBM Personal Computers, The Directory: Personally Developed Software for IBM Personal Computers* direct from IBM; for APPLE — the *Macintosh Buyers guide, Apple II Compatibility Guide*, and *Swift's Educational Software Directory - Apple II Edition*; for ATARI — *Atari Computer Educational Software Directory*; for RADIO SHACK — *TRS-80 Educational Software Sourcebook.* Further directories include *Swift's Educational Software Directory for Corvus Network - Apple II Edition, The Software Finder: A guide to Educational Microcomputer Software, T.E.S.S.: The Educational Software Selector*, and *Microcomputers in Elementary and Secondary Education: A Guide to Resources.* Other references include: *The Complete Guide to Cleveland Computing, Creative Computing Software Buyer's Guide, Software Express, Whole Earth Software Catalog, Micro Computer Index, Microcomputer Market Place* (Bowker), and *Computing Resources for the Professional.* Further they subscribe to 65 magazines and journals explicitly about computers and computer software and have thirty audiovisual materials on filmstrip/cassette or VHS tape on such subjects as *Computer Awareness, Ethics in the Computer Age*, and *Discover Logo!*.

They have specialists for computers of their members including Apple, IBM and Commodore. They are no longer actively supporting Atari or Radio Shack. They cover from early childhood to college prepration and track for subjects their members are interested, for example, currently — problem solving. They select software based on reviews, journals, and salesmen, and will only consider items they can preview and return if unsatisfactory. Quite a bit of the software is donated free by the publishers. They did have to purchase 20 copies of Appleworks. They produce a newsletter bi-monthly and list new software. Another activity is staff development and training. They are members of MECC and a number of schools are members of MECC through

them. They will circulate only copyprotected materials. They also obtained a site license for LogoWriter.

The Consortium started in 1981 as part of the Teacher Center Staff Development funded by the Federal Government through 1981 of which there were about 100 funded throughout the U.S. They employ 3 people and are funded through membership fees and local foundation funding. They employ consultants to do the teaching of the workshops. They hold a major conference for 2 days each October and last spring held a Logo Conference.

Conferences they have attended include ADCIS, a MECC conference, and a conference held by the Department of State Education of Ohio. Their subscription to EPIE included every school district but was not renewed. For technical assistance from the state they contacted Michael Hartenstein (see below).

Other services for schools include the computer services of the Instruction TV stations and the International Council on Computers in Education (Eugene, OR) that publishes *Computing Teacher*.

There is a general lack of teacher training and support. Teachers need easier access to software and it needs to be more easily available. Copyright is "not a problem" as publishers are now making it easier with site licenses and "lab packs." But the use of software will not be successful until there is "lots and lots of hardware."

They receive a sense of direction and purpose from people such as Seymour Papert. They admire his work at the Hennigan School in Boston where there are 100 computers for 200 children. The computer can then become an integral part of their learning and there are "no scheduling hassles." They even had Papert out as the keynote speaker at the Logo Conference. They are also interested in Steve Ako's LegoLogo product. Other people who inspire include: Robert Taylor's book, Ludwig Braun of NYIT, Carol Greenis of Boston University, Walter Keotke of Scholastic, David Moursund (International Council, above), Beverly Hunter (Targeted Learning Corp., Amisville, VA).

They see no inspiration or vision at the state or federal level. The only funding of note are the title programs. They do see considerable pressure from parents to get computers into schools.

In schools, the "beautiful computer lab" is often PR with the community. In Ohio they are using lottery funds to buy computer hardware and software (this is similar to the provision in New York State of $3.25/student/year to buy these.)

In response to Alfred Bork's suggest of large curriculum development effort, there needs to be much more money into schools and more teacher training. It is "not just availability of software

and hardware." They find the young teachers are "pioneers" and accept the technology while there are the group that find it too difficult and too threatening [compare to categories in background discussion]. Teachers need time to learn to use and incorporate and they cannot do that without time off.

Further, the grassroots effort needs assistance, and cannot insist enough how important it is to train teachers "to overcome use problems."

Michael Hartenstein had been the Ohio State Education Computer Coordinator for 3 1/2 years and recently joined a local college. At the state they were active in the NIE Basic Educational Skills through Technology program. Their response was 1) a handbook for districts for teachers and administrators, and 2) establishment of a preview center with samples of materials and hardware of every type. Over time the hardware evolved to the few remaining companies in educational computers. There are about 1400 pieces of software that they received as "long term loans." The center was kept up to date and many old materials were "rolled over." Research files were maintained on 400 materials of popular articles, textbooks, journals and catalogues. About 100 of the 650 school districts have visited the center with about 5 people per visit. They also maintain a course of study library. They entertained linking up formally with the educational television stations but never pursued it. Seven of the 8 stations maintain their own computer resource facility and this acted as an outreach facility for preview and workshops as they were geographically dispersed.

An earlier special project with EPIE involved teacher training. They were one of eight sites and training kits were located at 30 locations, and the effort involved all 615 districts, EPIE, and the 7 Educational TV stations. It was a 7 step process where 28 people were trained in how to use the materials and they would meet with 20-25 people regionally. Another project was the statewide computer conference attracting over 1200 people. It provided hands on training and in 80% of the presentations people got to work with materials.

For 3 years the state has published a quarterly technology newsletter. It was compiled and produced by regional editors and gave exemplary practices and success stories.

Hartenstein currently is active in the new Ohio Educational Technology Association. It is comprised of 24 prominent people in Ohio and is open to business, government, and higher education. Its goals are: 1) To create a Political Action Committee (PAC) to work for state consideration of instructional funding to get a line item similiar to New York. The goal is to get a line item of $50 million. Current funding has been limited to $20 million in Chapter II funds (in

comparison to 11 million in the state) of which 60% has gone toward hardware and software. The lottery contributed about $18 million. 2) To make educational technology more prominent and attract large grants from corporations that would provide funds for consortium support of teachers. And 3) Be a communication factor like the West Virginia microcomputer network which involves the treasurers offices of 581 districts.

The proposed by-laws include: members can represent only one organization, to have the board comprised of 10 members, to have committee chairs for a) Advocacy, b) Education, and c) Communication, in areas of a) higher edcucation, b) business, and c) Service (PTO, PTA).

Mr. Hartenstein doesn't subscribe to the belief that schools have to be slow moving – that they can respond and respond quickly and, secondly, education is not limited to just public schooling. Mary Alice White's emphasis that much learning doesn't occur in the schools leads him to look to a classroom of the future that brings together business, schools, and libraries.

Information Network #13

RUGBY SCHOOL DISTRICT 5
1123 SOUTH MAIN STREET
RUGBY, ND 58368

County: PIERCE
Telephone: 701-776-5201

This is a: DISTRICT
Type: Regular District

Services:
16MMFILM

Enrollment: 891
Grade Range: K - 12

Metropolitan Status: Rural
District: RUGBY SCHOOL DISTRICT 5

Percentage of Children Below the Poverty Line: 12.5%
Total Expenditures for Instructional Materials: $57,300

Per Student Expenditures
(District-Wide)

Textbooks:	$ 16.00 - 17.99 (J)
Library Materials:	$ 7.00 - 7.99 (I)
Audiovisual Materials:	$ 2.00 - 2.99 (D)
Teaching Supplies:	$ 30.00 OR MORE (L)
Total Materials —	$ 60.00 - 74.99 (K)

Microcomputer(s):
Apple: 1 - 9
Radio Shack: 10 - 24

Personnel:
BADER, DALE
SUPERINTENDENT
FEDERAL PROGRAM ADMINISTRATOR

HEALY, GERRY
SEC CAREER EDUC SUPV
SEC GUIDANCE COUNSEL SUPV

HEILMAN, RICHARD
SCHOOL BOARD PRESIDENT

HOFFART, VICKI
BUS/FINANCE/PURCHASING SUPV

OSHANYK, JIM
MEDIA SVCS/AV/LIBRARY SUPV

STAMMEN, MARY
K-12 SPECIAL ED SUPERVISOR

STENSON, ROBERT
CAI SUPERVISOR

The first contact was with Mr. Dale Bader, Superintendent of the Rugby School District 5. The MDR designated CAI supervisor, Robert Stenson, concentrates on the vocational-business applications. Wes Miller is a lead teacher and head of the math department. They belong to a computer consortium operated by the North Dakota Council of School Administrators in Bismark and are tied to MECC software through the consortium.

They receive considerable information through state associations. There are regional professional meetings where teachers in math, etc. can share information and try software. The North Dakota Educational Association (affiliate of the National State Board for Vocation) conducts an October conference in math and business.

Other sources of information come from catalogues and publications. They order preview copies to evaluate and the state associations do a lot of previewing.

Federal funding has been from Chapter II funds for 6 years, some of which has gone to hardware and software. Instructors make recommendations in these and they have procured primarily Apple IIe's and IBM's. There have some local grants to elementary education.

In general, he feels that things are getting much better now and are becoming more proficient

in selecting. They are receiving help from the business community in purchases for the schools especially in the vocational area. People now are feeling comfortable about computers.

[Note: like some of the other states, there is a very strong vocational orientation of the computer program here. The issues of non-business subjects is often viewed as a secondary issue.]

Information Network #14

ROUNDOUT VALLEY CTL SCH DIST
PO BOX 9
ACCORD, NY 12404

Actual Location: KYSERIKE ROAD, ACCORD, NY

County: ULSTER
Telephone: 914-687-7633

This is a: DISTRICT
Type: Regular District

Services:
Bilingual

Enrollment: 2,451
Grade Range: K - 12

Metropolitan Status: Rural
District: ROUNDOUT VALLEY CTL SCH DIST
Percentage of Children Below the Poverty Line: 12.1%
Total Expenditures for Instructional Materials: $189,200

Per Student Expenditures
(District-Wide)

Textbooks:	$ 20.00 OR MORE (L)
Library Materials:	$ 5.00 - 5.99 (G)
Audiovisual Materials:	$ 1.00 - 1.99 (C)
Teaching Supplies:	$ 30.00 OR MORE (L)
Total Materials ---	$ 75.00 OR MORE (L)

Microcomputer(s):

Apple:	1 - 9
IBM:	NA
Commodore:	NA
Radio Shack:	1 - 9
Other:	NA

Personnel:
KELDER, WAYNE
SCHOOL BOARD PRESIDENT

O'SULLIVAN, H ROSS
SUPERINTENDENT
FEDERAL PROGRAM ADMINISTRATOR

ROTHMAN, DONALD
CHAPTER I/ECIA COORDINATOR
K-12 GUIDANCE COUNSEL SUPV
K-12 READING SUPERVISOR
K-12 REMEDIAL READING SUPV
K-12 SPECIAL ED SUPERVISOR
ACADEMIC TESTING SUPV

STAIGER, JOHN
BUS/FINANCE/PURCHASING SUPV

VERTUCCI, JAMES
K-12 CURRIC/INSTRUCT SUPV
CAI SUPERVISOR

The contact point was Mr. James Vertucci K-12 Curriculum/Instruction Supervisor and CAI Supervisor. They have two people who do inservice training on a half-time basis each. One concentrates on 7-12 and the other on K-6. Assistance to teachers includes after school workshops.

Information on software comes from the county software committee headed by Ted Detchen which is part of the Board of Cooperation Services (one per county in New York). He considers information from them to be very useful. Twice monthly the committee brings in publishers and there is an exchange of ideas and printed materials.

There is also a county Learning Technology Fair where both major and minor companies show their products and teachers find this useful. In addition there are both in-state and out-of-state conferences that have been useful.

In New York State there is currently a $1.25/student software aid. It used to be $3/student for hardware but that line item had expired. He estimates if he spends $10,000 he gets about $6,000 back.

Teachers are just getting into computers. In secondary schools there is a strong need for computers and in elementary schools they are asking for creative uses. There is a goal for computer literacy in the 5th and 6th grades. Everyone needs machines and there is 1 computer for every 3 classrooms. And it is just not possible with budgets to get even close to 1 or 2 to 1.

Information Network #15

UNION CO REG HIGH SCH DIST 1
MOUNTAIN AVENUE
SPRINGFIELD, NJ 07081

County: UNION
Telephone: 201-376-6300

This is a: DISTRICT
Type: Regular District

Services:
Bilingual

Enrollment: 3,024
Grade Range: 9 - 12

Metropolitan Status: Suburban
District: UNION CO REG HIGH SCH DIST 1

Percentage of Children Below the Poverty Line: 3.8%
Total Expenditures for Instructional Materials: $753,300

Per Student Expenditures
(District-Wide)

Textbooks:	$ 20.00 OR MORE (L)
Library Materials:	$ 15.00 OR MORE (Q)
Audiovisual Materials:	$ 10.00 OR MORE (L)
Teaching Supplies:	$ 30.00 OR MORE (L)
Total Materials ---	$ 75.00 OR MORE (L)

Microcomputer(s):

Apple:	100 - 249
Radio Shack:	25 - 49

Personnel:
BAUMAN, CHARLES
ASSISTANT SUPERINTENDENT
TEACHER PERSONNEL SUPV

BUROGE JR, HAROLD
BUS/FINANCE/PURCHASING SUPV

KENNY, FRANCIS
HEALTH SERVICES SUPERVISOR
CHAPTER I/ECIA COORDINATOR
SEC GUIDANCE COUNSEL SUPV
SEC SPICIAL ED SUPERVISOR

MERACHNIK, DONALD
SUPERINTENDENT
FEDERAL PROGRAM ADMINISTRATOR

MURIN, EDWARD
MEDIA SVCS/AV/LIBRARY SUPV
INSTRUCTIONAL TV SUPV
CAI SUPERVISOR

SIEGEL, MARTIN
SEC CURRIC/INSTRUCT SUPV
CHAPTER II/ECIA COORDINATOR
RESEARCH/DEVELOPMENT SUPV

WALPT, NATALIE
SCHOOL BOARD PRESIDENT

The contact point was Dr. Donald Merachnik, Superintendent of the Union County Regional High School District 1. There is substantial activity in the inservice training of teachers. First, there is an effort to build awareness of the computer as an instruction al tool and this includes development of computer science courses including Basic and Pascal languages. From each of the four high school buildings there are department meetings with the department supervisors about 4-5 times each month in which software is a topic. Catalogues and journals on software go into the high school media centers. Teachers are also sent to professional conferences. The teacher either asks the superintendent or at times the superintendent asks particular people to go. Computer conferences are also useful.

There are 3 state institutes that provide inservice training called the Regional Curriculum Service Unit (RCSU) and their school is part of the central region RCSU. A good contact is Dr. Elliot Solomon at the RSCU in East Brunswick. Their Media Center director is Mrs. Betty Reffley and she is active in reviewing software (much of the hardware is in the instructional media center). Other computer use coordinators are Thomas Baker and Arthur L. Johnson in the high schools.

Dr. Merachnik sees "lot of garbage" software and they preview and will send back. They have been concentrating on software in special education, science, and some English.

Dr. Merachnik outlined two main problems: 1) there is so much garbage software, and 2) it is too difficult to convince veteran teachers to see computers as a tool.

Information Network #16

BILLERICA SCHOOL DISTRICT
390 BOSTON ROAD
BILLERICA, MA 01821

County: MIDDLESEX
Telephone: 617-667-8300

This is a: DISTRICT
Type: Regular District

Services:
16MMFILM

Enrollment: 7,120
Grade Range: K - 12

Metropolitan Status: Suburban
District: BILLERICA SCHOOL DISTRICT

Percentage of Children Below the Poverty Line: 7.0%
Total Expenditures for Instructional Materials: $483,200

Per Student Expenditures
(District-Wide)

Textbooks:	$ 20.00 OR MORE (L)
Library Materials:	$ 9.00 - 9.99 (K)
Audiovisual Materials:	$ 2.00 - 2.99 (D)
Teaching Supplies:	$ 30.00 OR MORE (L)
Total Materials ----	$ 60.00 - 74.99 (K)

Microcomputer(s):

Apple:	100 - 249
Commodore:	1 - 9
Other:	1 - 9

Personnel:
BANIEWICZ, DENNIS
SEC SOCIAL STUDIES SUPV

BANNISTER, SUE
CHAPTER I/ECIA COORDINATOR

BREEN, PHILIP
SEC MATH SUPERVISOR

CALABRESE, ROBERT J.
SUPERINTENDENT
FEDERAL PROGRAM ADMINISTRATOR

CASEY, ROBERT
SCHOOL BOARD PRESIDENT

CLARKE, THOMAS
BUSINESS EDUCATION SUPV
CAI SUPERVISOR

CURTISS, DAMION
SEC ENGLISH/LANG ARTS SUPV

GABRIEL, PETER
SEC SCIENCE SUPERVISOR

GALLAGHER, MIRIAM
MEDIA SVCS/AV/LIBRARY SUPV

HOUGHTON, JERRY
BUS/FINANCE/PURCHASING SUPV
ASSISTANT SUPERINTENDENT

KATSOULIS, JOHN
SEC CURRIC/INSTRUCT SUPV
ASSISTANT SUPERINTENDENT
TEACHER PERSONNEL SUPV
SUPERVISOR OF GIFTED/TALENTED

PETERSON, EDWARD
K-12 SPECIAL ED SUPERVISOR

SAMSON, ROGER
BUSINESS EDUCATION SUPV
VOCATIONAL EDUC SUPV
INDUSTRIAL ARTS SUPV
HOME EC/CONSUMER ED SUPV

The first contact point was Mr. Philip Breen, the Secondary Math Supervisor in the high school. Application areas included math, computer science and business applications – mainly word processing. Each school has a designated liaison-resource person that teachers can go to about software.

They have computers in each elementary classroom and computer labs in the 2 middle schools. At the middle school level they have part-time literacy teachers. There is also a TAP (Team activity period) program that promotes computer usage. At the high school there are 4 computer rooms, 2 for math and 2 that are open to other uses. There is 1 computer resource person at the high school.

For information, they are "online" with the Merrimac Educational Consortium (MEC) which has resources developed for low achievers. The system consists of 6 terminals and was federally and state funded. Contacts at MEC are Dr. Richard Lavin, John Fillipo, and Bob Milley (see below). MEC has a software center with periodicals and preview. Other information comes from

vendors at computer fairs and they use guidelines to review software Mr. Breen feels that teachers often are looking for a "quick fix" so having liaison people around helps remedy that. Their school has a goal of 60 hours of computer literacy by the end of 8th grade. There are no Massachusettes state requirements. They used early Chapter I and Chapter II monies for inservice training

They find some public domain software available from Asbury Park and MEC. There is currently a proposal for on-line inservice training on a full time basis. They have a fairly large teacher literacy rate and use an outside consultant to come in to do training. Teachers receive inservice study credits if the course is through MEC or Fitchburg College. MEC and Fitchburg College cooperate to provide a masters program that is just beginning. Their school is going to fund 24 people with 50% reimbursement for an on-site course.

Another Massachusettes State Consortium, EDCO, has provided some consulting and there was a special education grant for training. In general, they are working toward literacy in usage and authoring rather than programming. Applications in databases, spreadsheets, and Appleworks are in particular demand by teachers.

Mr. Bob Milley is a principal at the Merrimac Valley Educational Consortium (MEC). The group has been providing training for 6 years since they were first established by a U.S. Department of Education, National Dissemination Network, Lighthouse Technology Project. In two years they have been involved in training over 2000 teachers. They work with schools in establishing training plans.

Their membership includes 22 school districts, a special education school and other groups. They also provide services around the country. Everything is handled on a "pay as you go" basis. Projects are priced and proposals are made. They also receive state and federal grants. They have "thousands" of pieces of software and it is "worth the trip." They have not found teachers find it too great a distance [Note: distances in Massachusettes are not what they are in Wisconsin or even Ohio]. They maintain access to software evaluations such as EPIE and the Digest of Software Reviews, and they actively publish a review of resources aimed at adult education.

Information Network #17

SALMON SCHOOL DISTRICT 291
PO BOX 790
SALMON, ID 83467

Actual Location: 907 SHARKEY STREET, SALMON, ID

County: LEMHI
Telephone: 208-756-4271

This is a: DISTRICT
Type: Regular District

Enrollment: 1,276
Grade Range: K - 12

Metropolitan Status: Rural
District: SALMON SCHOOL DISTRICT 291

Percentage of Children Below the Poverty Line: 16.1%
Total Expenditures for Instructional Materials: $90,900

Per Student Expenditures
(District-Wide)

Textbooks:	$ 8.00 - 9.99 (F)
Library Materials:	$ 8.00 - 8.99 (J)
Audiovisual Materials:	$ 4.00 - 4.99 (F)
Teaching Supplies:	$ 30.00 OR MORE (L)
Total Materials ---	$ 60.00 - 74.99 (K)

Microcomputer(s):

Apple:	25 - 49
Radio Shack:	1 - 9

Personnel:

BERRY, BERNADINE
MEDIA SVCS/AV/LIBRARY SUPV
CAI SUPERVISOR

BOSSERT, ROY
K-12 SPECIAL ED SUPERVISOR
SUPERVISOR OF GIFTED/TALENTED

MOTE, CARRIE
K-12 SOCIAL STUDIES SUPV

SMITH, JAMES A.
SUPERINTENDENT
FEDERAL PROGRAM ADMINISTRATOR

WHITE, KATHLEEN
SCHOOL BOARD PRESIDENT

WILEY, CLAIRE
BUS/FINANCE/PURCHASING SUPV

The first contact point was Mr. Jim Smith, the superintendent of Salmon School District 291. He follows three computer magazines and reads lots of advertisements. He also sees advertisements in magazines directed toward superintendents such as *American School & University* (AA&U).

One way they keep teachers educated is through regional conferences in Idaho or Montana. They belong to MECC through the Idaho IMC consortium out of Hayley High School under Dr. David Nunan. Their media specialist, Bernadine Berry (see below) goes to workshops and reads profusely (had bought her own computer).

Bernadine Berry is the Media Specialist for the school district. They are a remote district and this poses a major problem being in touch with others. She finds reading reviews is "not good enough" and it is necessary to obtain a preview copy. Western Montana College has a collection but this is 150 miles away. Materials through their own university they can use on site. Sunburst provides a video tape about their software and 30-day preview but many other companies are not as helpful.

They are not very good at integrating computer software with the curriculum and few programs really fit. They don't even have a computer in every classroom. Their primary interests have been Logo, wordprocessing, and educational games. In the high school wordprocessing has been integrated with the class, otherwise use of computers is more like enrichment.

The State Department of Education is not very active at all. The business education program is trying to replace typewriters with computers and they have put two computers in drafting (CAD – computer aided drafting), but this was tough on the instructor to learn.

They have used some Chapter II funds to promote teachers' learning and they will pay tuition and expenses or a substitute's salary to send teachers to conferences. They receive $6/hr for out of school learning.

There is a committee formed with a teacher from each building with up to $15K/year and teachers decide how they will use the money. They hired a computer technician out of that budget to help on inservice training.

Organizations like EPIE are useful in focussing attention but Ms. Berry feels she can't rely just on their reviews — one doesn't know the reviewer's bias or background.

In summary, she feels curricularly oriented programs like IBM's write-to-read is exciting and wonders if Apple will come up with something equivalent. In general programs are too expensive for tight budgets. She sees computers becoming more a part of education in the future with CD ROM library databases and wishes that networks were more affordable. Ms. Berry would like programs in science and social studies to provide experiences to students like what "real scientists do. They do what they can for training in an isolated area. [Note: like a number of respondents, Ms. Berry was extremely aware of current and and upcoming technology].

Information Network #18

LIVE OAK HIGH SCHOOL
2351 PENNINGTON ROAD
LIVE OAK, CA 95953

County: SUTTER
Telephone: 916-695-2143

This is a: PUBLIC SCHOOL
Type: Senior High School

Services:
Special Education
Computer Assisted Instruction
Vocational Education

Enrollment: 271
Grade Range: 9 - 12

Metropolitan Status: Suburban
District: LIVE OAK UNIF SCHOOL DISTRICT

Microcomputer(s): Apple
Total Number of Microcomputers: 25 - 49 (D)

Per Student Expenditures
(District-Wide)

Textbooks:	$ 20.00 OR MORE (L)
Library Materials:	$ 4.00 - 4.99 (F)
AudioVisual Materials:	$ 4.00 - 4.99 (F)
Teaching Supplies:	$ 30.00 OR MORE (L)
Total Materials ----	$ 75.00 OR MORE (L)

Personnel:
EDMISTON, GLEN
CAI SUPERVISOR
PRINCIPAL

SELF, MELINDA
ASSISTANT PRINCIPAL

The contact in the Live Oak High School was Glen Edmiston, the principal and CAI Supervisor. They operate a computer center and have a computer teacher who teaches one semester of computer science. They use all Apple computers and got good prices through a "Regional Occupational Program." There is some use of the computers in advanced math, science, and a second language. They have an older staff and ask for teacher input about choices.

They put software catalogues in a rack in the teachers' room. For inservice training they get help from the California State Department of Education, from private firms like Apple, and computer classes from Sacremento State College.

They make use of the Instructional Materials Center in Sutter City operated at the county level, operated by Carl Patton.